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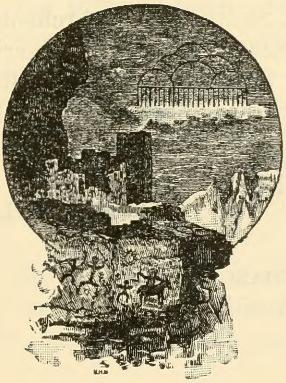
SMITHSONIAN INSTITUTION
BUREAU OF AMERICAN ETHNOLOGY
BULLETIN 176

RIVER BASIN SURVEYS PAPERS

Frank H. H. Roberts, Jr., *Editor*

Inter-Agency Archeological Salvage Program

NUMBERS 15–20



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1960

LETTER OF TRANSMITTAL

SMITHSONIAN INSTITUTION,
BUREAU OF AMERICAN ETHNOLOGY,
Washington, D.C., March 29, 1959.

SIR: I have the honor to submit the accompanying manuscripts, entitled "Historic Sites Archeology on the Upper Missouri," by Merrill J. Mattes; "Historic Sites Archeology in the Fort Randall Reservoir, South Dakota," by John E. Mills; "The Excavation and Investigation of Fort Lookout Trading Post II (39LM57) in the Fort Randall Reservoir, South Dakota," by Carl F. Miller; "Fort Pierre II (39ST217), a Historic Trading Post in the Oahe Dam Area, South Dakota," by G. Hubert Smith; "Archeological Investigations at the Site of Fort Stevenson (32ML1), Garrison Reservoir, North Dakota," by G. Hubert Smith (Introduction by Robert L. Stephenson and an appendix by Carlyle S. Smith); "The Archeology of a Small Trading Post (Kipp's Post, 32MN1) in the Garrison Reservoir, North Dakota," by Alan R. Woolworth and W. Raymond Wood, and to recommend that they be published as a bulletin of the Bureau of American Ethnology.

Very respectfully yours,

FRANK H. H. ROBERTS, Jr.,
Director.

DR. LEONARD CARMICHAEL,
Secretary, Smithsonian Institution.

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EXPLANATION OF THE INTER-AGENCY ARCHEOLOGICAL SALVAGE PROGRAM

The Inter-Agency Archeological Salvage Program is a cooperative plan of the Smithsonian Institution; the National Park Service and the Bureau of Reclamation, Department of the Interior; and the Corps of Engineers, Department of the Army. It was formulated, through a series of interbureau agreements, for the purpose of recovering archeological and paleontological remains which would otherwise be lost as a result of the numerous projects for flood control, irrigation, hydroelectric power, and navigation improvements in the river basins of the United States. Various State and local agencies have assisted in the work. To carry out its part of the joint undertaking, the Smithsonian Institution organized the River Basin Surveys as a unit of the Bureau of American Ethnology. The National Park Service has served as liaison between the various agencies and has provided the Smithsonian Institution with all the necessary information pertaining to the location of proposed dams and other construction and their priorities. It has also had responsibility for budgeting costs of the program, funds for which are provided in the annual Department of the Interior appropriations. The operations of the River Basin Surveys, Smithsonian Institution, have been supported by funds transferred to it from the National Park Service. Through agreements with the National Park Service, money has also been made available to State and local agencies to supplement their own resources and aid them in their contributions to the program.

The River Basin Surveys Papers, of which this is the fifth bulletin, are issued under the scientific editorship of Frank H. H. Roberts, Jr., director of the Bureau of American Ethnology.

SMITHSONIAN INSTITUTION JAN 25 1961

PUBLISHER'S NOTE

A separate edition is published of each paper in the series entitled "River Basin Surveys Papers." Available copies of Papers 1–20 can be had upon request to the Publications Office, Smithsonian Institution, Washington 25, D.C.

River Basin Surveys Papers Published Previously

No. 1. Prehistory and the Missouri Valley Development Program: Summary Report on the Missouri River Basin Archeological Survey in 1948, by Waldo R. Wedel. Bull. 154, pp. xv–xviii, 1–59, pls. 1–12, fig. 1. 1953.
No. 2. Prehistory and the Missouri Valley Development Program: Summary Report on the Missouri River Basin Archeological Survey in 1949, by Waldo R. Wedel. Bull. 154, pp. 61–101, pls. 13–15. 1953.
No. 3. The Woodruff Ossuary, a Prehistoric Burial Site in Phillips County, Kansas, by Marvin F. Kivett. Bull. 154, pp. 103–141, pls. 16–28, figs. 2–3. 1953.
No. 4. The Addicks Dam Site:
  I. An Archeological Survey of the Addicks Dam Basin, Southeast Texas, by Joe Ben Wheat. Bull. 154, pp. 143–252, pls. 29–47, figs. 4–23. 1953.
  II. Indian Skeletal Remains from the Doering and Kobs Sites, Addick Reservoir, Texas, by Marshall T. Newman. Bull. 154, pp. 253–266, figs. 24–28. 1953.
No. 5. The Hodges Site:
  I. Two Rock Shelters near Tucumcari, New Mexico, by Herbert W. Dick. Bull. 154, pp. 267–284, pls. 48–54, figs. 29–30. 1953.
  II. Geology of the Hodges Site, Quay County, New Mexico, by Sheldon Judson. Bull. 154, pp. 285–302, figs. 31–35. 1953.
No. 6. The Rembert Mounds, Elbert County, Georgia, by Joseph R. Caldwell. Bull. 154, pp. 303–320, pls. 55–56, figs. 36–40. 1953.
No. 7. Archeological Investigations in the Oahe Dam Area, South Dakota. 1950–51, by Donald J. Lehmer. Bull. 158, 190 pp., 22 pls., 56 figs., 6 maps. 1954.
No. 8. Excavations in the McNary Reservoir Basin near Umatilla, Oregon, by Douglas Osborne. With appendixes by Marshall T. Newman, Arthur Woodward, W. J. Kroll, and B. H. McLeod. Bull. 166, 250 pp., 40 pls., 6 figs., 19 maps. 1957.
No. 9. Archeological Investigations in the Heart Butte Reservoir Area, North Dakota, by Paul L. Cooper. Bull. 169, pp. 1–40, pls. 1–12, figs. 1–2. 1958.
No. 10. Archeological Investigations at the Tuttle Creek Dam, Kansas, by Robert B. Cumming, Jr. Bull. 169, pp. 41–78, pls. 13–24. 1958.
No. 11. The Spain Site (39LM301), a Winter Village in Fort Randall Reservoir, South Dakota, by Carlyle S. Smith and Roger T. Grange, Jr. Bull. 169, pp. 79–128, pls. 25–36, figs. 3–4. 1958.
No. 12. The Wilbanks Site (9CK–5), Georgia, by William H. Sears. Bull. 169, pls. 37–45, figs. 5–9. 1958.
No. 13. Historic Sites in and around the Jim Woodruff Reservoir, Florida-Georgia, by Mark F. Boyd. Bull. 169, pp. 195–314, pls. 46–55, figs. 10–11. 1958.
No. 14. Six Sites near the Chattahoochee River in the Jim Woodruff Reservoir Area, Florida, by Ripley Bullen. Bull. 169, pp. 315–357, pls. 56–73, figs. 12–13. 1958.

FOREWORD

In the present volume of River Basin Surveys papers there are six reports pertaining to a phase of the Inter-Agency Archeological Salvage Program which thus far has not been given as much publicity as some of the other activities. The articles deal with a series of historic sites investigations which were carried on in the Fort Randall and Garrison Reservoir areas and in the spillway area below the Oahe Dam. The field investigations were based on extensive documentary studies which were made by Merrill J. Mattes and Ray H. Mattison, historians on the staff of the Region Two office of the National Park Service at Omaha, Nebr. Mr. Mattes prepared a detailed report concerning the historic sites located in the Fort Randall Reservoir area while Mr. Mattison compiled the necessary data for the Oahe and Garrison Reservoirs. In each case extensive studies were made on the ground for the purpose of locating and identifying as far as possible the various forts and trading posts mentioned in the journals of the early explorers and the records of the various fur-trading companies which operated along that portion of the Missouri River. From the evidence thus obtained Mr. Mattes was able to recommend specific sites for excavation. In some cases there was no question about the identity of the site involved, but in others excavations were required to determine whether or not a correct identification had been made or if perchance the location was that of some other post.

The general background for the historic sites studies and the salvage operations required is discussed by Mr. Mattes in his paper, "Historic Sites Archeology on the Upper Missouri." He provides considerable information which is not given in the various detailed site reports that constitute the following papers. Since Mr. Mattes wrote the article, the Fort Randall, Oahe, and Garrison Dams have been closed. The Fort Randall closure was in the summer of 1953 and that of the Garrison in the summer of 1954. Virtually all the sites mentioned in those two areas have long since gone under water. The Oahe Dam was closed in the summer of 1958 and, although a number of important sites near the lower end of the reservoir were inundated during the fall and winter months of 1958–59, it will still be possible to investigate others farther upstream as late as the summer of 1961. Also, since Mr. Mattes' paper was written the Big Bend Reservoir, which will lie between the upper reaches of the Fort Randall Reservoir and the Oahe Dam, has been activated and a series of new problems comparable to those discussed for the other three reservoirs will need to be solved. While the specific situation has changed, the overall picture is still as critical at this time as it was when the Mattes paper was prepared.

The excavation of sites was for the most part carried on by parties from the Missouri Basin Project of the River Basin Surveys, and four of the papers are by members of the River Basin Surveys staff. During the course of the work Mr. Mattes and Mr. Mattison were extremely helpful in assisting party leaders to locate their sites and in interpreting the materials from them. The investigations in the Fort Randall area were mainly conducted by John E. Mills. The preliminary reconnaissance and testing of sites was, however, done by Thomas R. Garth, and Dr. Mills has included the information gathered by Garth in his paper, "Historic Sites Archeology in the Fort Randall Reservoir, South Dakota." One of the Fort Randall sites, however, was excavated by Carl F. Miller, and his report on the Fort Lookout Trading Post II incorporates the notes made by Mr. Garth when he did some digging there during the preceding field season.

As indicated above, no historic site digging has yet been done in the Oahe Reservoir basin proper. The excavations by G. Hubert Smith at Fort Pierre II were in an area some distance below the dam, but were of a salvage nature in that the construction of the spillway for the dam did involve the remains of that historic trading post. The studies at Fort Pierre II as reported by Mr. Smith were the latest in the series.

In the Garrison Reservoir area Mr. Smith initiated the historic sites excavations by his work at the site of Fort Stevenson. His detailed account of the activities there constitutes Paper No. 19 of the present volume. Since those investigations were the first extensive ones in the historic sites program and his report was the first comprehensive one of that nature to be completed, the Fort Stevenson paper perhaps should have followed immediately after Mr. Mattes' article. However, it seemed better to group the papers by reservoir area, proceeding northward along the river, rather than by the chronological order of the excavations, and that is the reason for the sequence as printed in this bulletin. The work at the small trading post that has been identified as Kipp's Post was done by Alan R. Woolworth and W. Raymond Wood under an agreement between the National Park Service and the State Historical Society of North Dakota. The site of the post had previously been located and identified by G. Hubert Smith, but it was not possible for Mr. Smith to conduct excavations there. Consequently the arrangements were made whereby Mr. Woolworth and Mr. Wood carried on that work. Mr. Smith and Mr. Woolworth previously cooperated in investigations at

Fort Berthold, also in the Garrison basin, where there was an extremely interesting site consisting of the remains of Fort Berthold I, Fort Berthold II, and the Arikara-Hidatsa-Mandan village called Like-a-Fishhook. Part of the work at that location was done under agreements between the National Park Service and the State Historical Society of North Dakota, and some of it was carried on by Mr. Smith as a River Basin Project. Because the results obtained are so extensive and it has seemed advisable to combine both the historic White and historic Indian stories, the overall paper will be of such size as to warrant publication in a separate bulletin. For that reason the Fort Berthold results are not included in the present series.

Some excavations have been made in other historic sites in the Missouri Basin, but because their locations are on tributary streams and in other reservoir areas, they are not being reported upon in the present publication, which is primarily concerned with the Upper Missouri. At a later date a number of additional papers on historic sites will be issued in a subsequent bulletin.

FRANK H. H. ROBERTS, Jr.
Director, River Basin Surveys.

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SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 176

River Basin Surveys Papers, No. 15

Historic Sites Archeology on the Upper Missouri

By MERRILL J. MATTES

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HISTORIC SITES ARCHEOLOGY ON THE UPPER MISSOURI[1]

By Merrill J. Mattes[2]

INTRODUCTION

The Flood Control Act of 1944 laid the groundwork for a comprehensive water-control plan for the Missouri River Basin, involving the survey of over 100 potential reservoir sites, and the early creation of several of these reservoirs by the Corps of Engineers and the Bureau of Reclamation. The construction of large dams, inundating extensive river valleys, posed a grave threat to important historical and archeological values quickly recognized by two other Government agencies which have primary responsibilities in these fields—the National Park Service of the United States Department of the Interior, and the Smithsonian Institution. Under the aggressive leadership of chief historian R. F. Lee and assistant chief historian Herbert E. Kahler, of the National Park Service, and Dr. Frank H. H. Roberts, Jr., of the Bureau of American Ethnology, a program was launched for the survey and salvage of archeological sites threatened or doomed by the prospect of inundation (Corbett, 1949; Johnson, 1951; Mattes, 1947; Roberts, 1952).

Conceived in 1945, the program was actually implemented in 1946 when a field office of the Smithsonian Institution was set up at the Laboratory of Anthropology of the University of Nebraska at Lincoln, and the positions of historian and liaison archeologist were set up by the National Park Service at its Region Two Office in Omaha (Wedel, 1947). Field surveys were started in 1946, while comprehensive excavation projects were started in 1949 (Wedel, 1949). From the standpoints of available funds and the intensity of fieldwork, the program reached its climax in the summers of 1951 and 1952 when 16 separate survey or excavation parties were operating (B.A.E. Ann. Reps.). A drastic reduction in funds beginning in the fiscal year 1953 resulted in a sharply curtailed program, there being only six field parties during that summer. In 1954 the program continued on this limited basis (U.S. Dept. Int., 1952 a). The need for continuing intensive salvage has not abated, particularly in the huge Fort Randall, Garrison, and Oahe Reservoir areas on the "main stem" of the Missouri River in the Dakotas; but the prospects now are that many important sites will be unsurveyed, certainly unexcavated, because of the inadequacy of funds (U.S. Dept. Int., 1953).[3]

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[1] Submitted August 1954.

[2] Regional Historian, National Park Service, Region Two.

The primary concern has been the excavation of prehistoric Indian sites, and most of the funds have gone for this purpose because it has been realized that the only primary sources of information that exist in the field of prehistory lie underground. However, National Park Service officials have been conscious of the need, also, to conduct researches to ascertain what historic sites were threatened by the water-development program, to locate such sites as precisely as possible by analysis of documentary records and field surface reconnaissance, and to recover valuable historical data by excavation.

The principle of utilizing the technique of archeology as a research weapon in the field of history, while long recognized in Europe, has not received wide acceptance in the United States until the past two decades. Beginning in the WPA project days of the 1930's, there has been an increasing number of sites, significant in some phase of early American history, which have been excavated with profitable, sometimes spectacular, results. There has also developed a small but respected number of archeologists who, becoming fascinated by the possibilities in this field, have made a specialty of "historic sites archeology." The National Park Service, several of the State historical societies, and certain private foundations have been leaders in this field (Anon., 1951 and 1953; Harrington, 1952).

Since a historic site by its very definition presumes some preknowledge of underground data, the need for excavating such a site must be carefully assessed beforehand, for such a project may involve a sizable outlay of funds (Harrington, 1953). Obviously, costly excavation of a site concerning which practically all architectural and cultural details are already known would not be justified. Archeological excavation of a historic site is justified primarily to fill important gaps in documentary or archival research. It may yield structural evidence that has been partly or entirely lacking, or correct the misinformation that contemporary historians and diarists sometimes make. A second and oftentimes quite important justification for this type of project is the collection of historical objects that help to throw light on living conditions of the period and place, or that may illuminate specific problems. Museums, deluged with random items of dubious authenticity, appreciate receiving collections that have been scientifically assembled by excavation, the plans guided and the results interpreted by qualified technicians.

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[3] There was an even greater reduction in funds and fieldwork in the fiscal year 1954–55. Beginning in 1955–56 and continuing through 1957–58, marked increases in appropriations made possible an expansion of the investigations. In 1955–56 there were 8 field parties from the River Basin Surveys, Smithsonian Institution, and 6 parties from State institutions working under agreements with the National Park Service. During 1956–57 the Smithsonian sent out 16 parties, while cooperating institutions were represented by 9 parties. In 1957–58 there were 19 Smithsonian parties and 11 from cooperating institutions working in the Missouri Basin. The situation again took a downward trend in 1958–59 and it was necessary to reduce the Smithsonian parties to 10 and those of the cooperating institutions to 6. Conditions continue to be as critical as described by Mr. Mattes and are further complicated by the activation of the Big Bend Reservoir project between Fort Randall and Oahe.—EDITOR.

THE MISSOURI BASIN

The Missouri Basin, occupying approximately one-sixth of the land surface of the continental United States but comprising less than one-twentieth of the population, is the heartland of the traditional frontier American West. The seemingly interminable Great Plains, rising imperceptibly to the sudden crescendo of the Rocky Mountains, was the last major region in the United States to settle down to a peaceful domestic routine. Long after territories east of the Mississippi had been well populated and methodically "civilized," the wild empire of the buffalo, the Sioux Indian, and the bighorn sheep attracted only the more rugged citizens—traders, trappers, soldiers, freighters, prospectors, missionaries, and Indian fighters—typical frontiersmen all (Briggs, 1950).

There is, of course, no official date for the end of the "trans-Mississippi frontier," but the carnage at Wounded Knee Creek, in late December 1890, the last important clash between red man and white on the American continent, makes an excellent milestone (Mooney, 1896). It is more difficult to determine when this frontier began. Presumably this was whenever the first white man reached its easternmost limits. True, Lewis and Clark were the first recorded white men to ascend the Missouri to its uppermost reaches, cross the Continental Divide, and reach the Pacific Ocean by land route, but many white men preceded them in the exploration of the Great Plains (Lewis and Clark, 1904; Coues, 1893). Just how far west the La Vérendrye brothers traveled in 1742–43 is an unsettled point, but it is certain that for decades prior to Lewis and Clark traders of French, Spanish, and British origin or auspices did invade the Plains (Nasatir, 1952). We know that Coronado entered the southern limits of the basin in 1541 and the conquistadores who succeeded him penetrated the basin many times. The Villasur party, victims of Pawnee treachery, reached the forks of the Platte in 1720 (Bolton, 1949, App., pp. 282–304; Folmer, 1953, pp. 280–284).

The Platte-North Platte-Sweetwater route to South Pass was discovered in 1812 by Robert Stuart and his Returning Astorians, and in 1824 it was first utilized by trappers and traders of the Rocky Mountain Fur Co. as a route to the settlements (Rollins, 1935; Dale, 1941). In 1841 the first bona fide emigrants ascended this covered-wagon route; in 1849 the emigration became a flood, spilling toward the California gold fields (Ghent, 1929; Hafen and Rister, 1953, pp. 315–330).

The Platte or Oregon Trail route, precursor of the first transcontinental railroad, completed in 1869, demonstrated the virtues of the Central Route overland to the Pacific Coast. However, for many decades it was rivaled by the Missouri River as a major transcontinental route. From the time of Lewis and Clark until the completion of other railroad bridges in Dakota Territory in the 1880's, the "Big Muddy" was traveled by thousands of pioneers and hardy adventurers, its tortuous banks becoming the setting of many small but vigorous communities.

To frontiersmen pushing out onto the prairies, accustomed to river travel, the wide Missouri River rather than the shallow unnavigable Platte was the obvious way west, and the fact that it made a decided northward swing about 200 miles west of St. Louis was not a deterrent. This mighty stream was not only the key to the mysterious and long-sought Western Sea, it was the royal road to riches through the lucrative fur trade. After 1806 its role as a major transcontinental thoroughfare was insured, and soon trading posts began to spring up near every Indian village (Chittenden, 1936, pp. 75–602). Among the earliest of these was Bijou's (or Bisonette's) trading post below the mouth of White River, set up by Manuel Lisa in 1812 while en route to the Arikara (Drumm, 1920, pp. 56–59). In 1822 two major establishments appeared farther upstream, just below the S-shaped reverse called Big Bend, between present Chamberlain and Pierre—the American Fur Co.'s Fort Recovery, and Fort Kiowa alias Fort Lookout, a rival post of the Columbia Fur Co. In 1828 the great trading post of Fort Union was erected by the American Fur Co. near the mouth of the Yellowstone River, while rival posts were erected in the vicinity by Kipp, Campbell, and Sublette. About 1830 Fort Clark appeared at Knife River, and Fort Pierre and Fort Laframboise were erected at Bad River near present Pierre (Wilson and De Land, 1902; Abel, 1932). In 1845 the American Fur Co. established Fort Berthold at the great bend at the Mandan Villages where the Missouri River makes its final swing westward.

There were a few occasions when officials launched expeditions upriver to subjugate or parley with the Indians—notably the Leavenworth expedition of 1823 and the Atkinson-O'Fallon expedition of 1825—but fur traders dominated the scene until the 1850's, when Indian troubles on the Plains brought the United States Army into the picture.

In 1855 General Harney, after chastising Sioux Indians on the Platte, led his cavalry overland from Fort Laramie and took over

Fort Pierre from the traders, making it the first military post on the Upper Missouri. This was shortly succeeded by Fort Lookout and Fort Randall downstream (Meyers, 1914, pp. 71–108). Indian uprising during the 1860's prompted the addition of fortified points and garrisons at Fort Rice and Fort Stevenson while Whetstone, Lower Brulé, Grand River, and Fort Berthold Indian agencies, among others, came into being as steps toward pacifying and civilizing the bewildered aborigines (Comm. Ind. Aff., 1865–70).

Meanwhile, pirogues, canoes, flatboats, bullboats, and steamboats plied upriver to these primitive or warlike establishments or beyond into Montana country, where the fur trade was replaced during the 1860's by the lure of gold. Steamboat landings, woodyards, saloon towns, and little communities of assorted description appeared along the river to fulfill the needs of the rough and dangerous times.

Until 1849 the Missouri River rivaled the Platte route as a major line of approach to the Far West. After that date it became the line of demarcation between the eastern settlements and the western wilderness, with Indians, Indian agents, and United States Cavalry playing out the last act of interracial violence.

THE NATIONAL PARK SERVICE AND THE MISSOURI BASIN

Planned construction of the several giant dams along the Missouri River in the Dakotas unavoidably doomed many of these sites, highly significant to American frontier history. For the first time in the known history of river impoundment, the nature of the calamity about to befall the cause of historical conservation was fully understood. Further, machinery was on hand to do something about it.

The National Park Service, by authority of the Historic Sites Act of 1935, is the Federal agency primarily responsible for the conservation of historic sites. This responsibility extends first of all to sites that happen to be, accidentally or by design, in Federal ownership, such sites comprising the bulk of the present 180 national parks, national monuments, national memorials, national historical parks, etc., in the National Park System (Lee, 1951). Secondly, however, the Service is charged by this Act to make necessary surveys of historic as well as prehistoric sites throughout the United States, to assess their national significance, and to cooperate with other agencies, State or Federal, in the preservation and interpretation of such sites. When the National Park Service as an Interior Department agency became involved in the Missouri River Basin program, it became readily apparent that it shouldered a dual responsibility—to undertake recreational planning for reservoir areas, and to initiate a program for the conservation of historic and archeologic sites threatened by these reservoirs (Mattes, 1947, 1952 a).

The historical phase of the Missouri River Basin program began with the employment of a full-time historian for the task in the summer of 1946. The work involved intensive library and archival studies at various repositories, notably the National Archives, and files of the various State historical societies. This was followed by field reconnaissance to identify historic sites, structures, or other features to be inundated, to evaluate their significance, and to recommend steps to be taken to "salvage" data or materials wherever possible. Salvage alternatives included comprehensive photography, mapping, measured drawings, and relocation of structures, and archeology of extinct sites—that is, the recovery of surviving historical objects and structural evidence underground.

During the period 1946 to 1952 over 80 proposed reservoir areas were surveyed by Service historians. Although the results of most of these surveys did not appear as separate reports, but were incorporated in official reports on recreational planning, a few areas contained historical values of such magnitude that separate reports were deemed essential. Of these, the four principal reports are those relating to the Gavins Point, Fort Randall, Oahe, and Garrison Reservoirs, all on the "main stem" of the Missouri River in South and North Dakota (Mattes, 1949; Mattison, 1951, 1953 a, b).

In addition to summary reports on reservoir areas, there has also been a series of reports on individual sites, designed primarily to provide orientation for archeologists and others engaged in actual salvage work. Several of these have found publication (Mattes, 1952 b; Mattison, 1951; Hoekman, 1952). Some of these reports have been contributed by graduate students of colleges or universities, enlisted through the cooperation of the Mississippi Valley Historical Association (Dick, 1950).

The data compiled by the Missouri River Basin historical survey have not been limited to those found in published material. Inevitably, the broad scope of this survey has enabled the historians to sweep up in their net an imposing array of new data, derived from interviews and unexploited documents, which have not only expanded the historical horizon but have compelled scholars to revise many long-cherished misconceptions. The survey has provided fish, so to speak, for many years of historical frying. Several "byproducts" of this research are now in manuscript form; a few have found their way into print (Mattison, 1954 a, b, and c; Mattes, 1953; Morgan, 1953, pp. 376–377).

With the assistance of a staff photographer, over 1,500 record photographs have been made of historic sites and features that would otherwise have gone unrecorded. These pictures are on file in the Region Two Office of the National Park Service in Omaha, with copies in the files of the State historical societies most directly concerned (U.S. Dept. Int., 1952 b). With funds largely provided by the Missouri River Basin Project, the National Park Service supervised a project for obtaining measured drawings of 12 structures in the Missouri River Reservoir areas, which drawings and accompanying notes and photographs have been prepared and are filed in the Library of Congress in accordance with standards set forth by the Historic American Buildings Survey.[4]

The principal salvage effort in the historical field, however, has been the archeological search and excavation of sites of importance in early Missouri River history, with the object of ascertaining or verifying structural data and obtaining objects, for eventual museum use and study, which might throw new light on everyday conditions during the frontier period. The Smithsonian Institution, which had already assumed responsibility for the survey and excavation of Indian sites, agreed to undertake the historic sites fieldwork required. After several unsuccessful efforts to obtain appropriations for this particular type of archeology, funds were finally made available in the fiscal year 1950. Actual fieldwork in historic sites on the Upper Missouri was conducted for three summers, 1950 to 1952 inclusive, and again in 1954, all in the Fort Randall and Garrison Reservoirs, where dams were under construction and where impoundment, at the date of writing this report, has actually covered many of the critical sites described. (Although field reconnaissance by Service historians included rather thorough coverage of the Oahe and Gavins Point Reservoirs, dam construction in those instances has been scheduled somewhat later and consequently salvage measures have been less imperative. It is hoped that work can yet be accomplished there, or archeological losses—both historic and prehistoric—will be extensive.)

The Fort Randall report listed 120 historic sites and features, including 15 Lewis and Clark camp sites, 3 military posts, 4 trading posts, and 13 abandoned communities of other types (Mattes, 1949). The Garrison report described 77 historic features, including 15 identifiable Lewis and Clark sites, 1 military post, 4 trading posts, and 9 abandoned communities of other types (Mattison, 1951).

What factors determined which sites would be most eligible for archeological investigation, in view of the limitation placed on funds available for that purpose? Three such factors appeared in weighing any given site or in weighing one against another—the degree of historical significance, the extent of available knowledge, and the accuracy of orientation data. Thus, theoretically, the most eligible site would be associated with some important event in American history. We would know precisely where to find it, yet we would lack important data which we might reasonably expect to be revealed by excavation.

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[4] The measured structures are: in Gavins Point Reservoir, Episcopal and Congregational Missions, Santee Indian Reservation, and the Hutterite Mill near Tabor; in Fort Randall Reservoir, the Fort Randall Chapel; in the Oahe Reservoir, the Oahe Chapel, St. Johns Episcopal Church and Chapel at Cheyenne River Agency, blacksmith shop at Fort Bennett; in Garrison Reservoir, the Fort Berthold Congregational Mission, Indian dance hall at Elbowoods, the powder magazine and officers' quarters at Fort Buford.

The Lewis and Clark expedition was unquestionably of epic importance, hence the explorers' camp sites satisfy the first requirement. However, it would be difficult to make a case for archeological work at such sites since they would be virtually impossible to pinpoint—if indeed they still survived over 150 years of channel shifting—hence the returns would be extremely meager, if not entirely negative. Steamboat landings, villages, missions, and other communities of fairly recent origin might bear such similarity to still-existent communities that archeological findings might not be rewarding. Three classes of sites, representative of significant frontier eras, offered the greatest promise. These were the trading posts, the military posts, and the early Indian agencies.

Sites finally selected for exploration and for excavation were, in order of their appearance, going upriver: Fort Randall (first phase), Fort Randall steamboat landing, Whetstone Indian Agency, Bijou's trading post, Fort Recovery, Lower Brulé Indian Agency (first phase), Fort Lower Brulé, Fort Lookout (four phases), Fort Hale, all in the Fort Randall Reservoir area, in Gregory, Charles Mix, Lyman, Brulé, Buffalo, and Hughes Counties, S. Dak.; and Fort Stevenson, Fort Berthold (three phases), and Kipp's Post, all in the Garrison Reservoir, in Mercer, McLean, Mountrail, Dunn, McKenzie, and Williams Counties, N. Dak.

Any success achieved by the archeological search for historical data in the Missouri River Reservoir areas is due in large measure to the close and continuing cooperation between the Lincoln field office of the Smithsonian Institution and the Omaha office of the National Park Service, despite a succession of personnel in key positions at both establishments. While under the continuing general direction of Dr. Frank H. H. Roberts, Jr., Bureau of American Ethnology, the Missouri Basin Project of the Smithsonian Institution has been under the successive leaderships of Waldo R. Wedel, Paul L. Cooper, Ralph D. Brown, and Robert L. Stephenson. The post of liaison archeologist for the National Park Service has been filled successively by Jesse D. Jennings, Gordon C. Baldwin, and Paul L. Beaubien. However, as regional historian the writer has been identified with the project continuously since 1946. Until 1949 he was historian for the Missouri River Basin Project; thereafter, in his present capacity, he assumed general technical direction of all historical and archeological programs in Region Two of the National Park Service. In 1950 Ray H. Mattison and Harry B. Robinson were appointed historians for the Missouri River Basin.

HISTORIC SITES INVESTIGATIONS

In the spring of 1950 funds for the historical phase of the salvage program were assured, and Thomas R. Garth was employed as archeologist in this field. In July he accompanied Cooper and the writer on a trip to initiate the program in the Fort Randall Reservoir.

The first problem requiring attention was the exact location of early Fort Randall, a military post of commanding importance in the Dakotas from 1856 to 1892 (Mattes, 1952 b). In 1871 the crude log structures at this post had been replaced by large frame buildings. Contemporary pictorial evidence suggested that the rebuilt fort was somewhat removed from the original. It was suspected that the early site was on the point of land once known as Handy's Point, which would be entirely covered by the giant Fort Randall Dam (Mattes, 1949, pp. 482–483; Chittenden, 1936, p. 927). The area was searched rather thoroughly but surface evidence, at least, was negative. It was the consensus that, despite certain contrary evidence suggested in the meager pictorial data, the early fort must have been laid out substantially within the area of the identifiable later Fort Randall. Since this site would be just below the downstream toe of the dam, and precautions had been taken that it would not be disturbed by construction activities, it was determined to forsake Fort Randall for the moment and to take the party upriver where important known values would be destroyed.

The Fort Randall Reservoir area extends from the site of old Fort Randall, just above the Nebraska-South Dakota line, to the curious reverse in the Missouri River known as Big Bend, just above Fort Thompson, agency for the Crow Creek and Lower Brulé Indian Reservations. This is a distance of nearly 140 miles. However, the heaviest concentration of sites, both historic and prehistoric, falls within a relatively short section of about 20 miles in the upper reservoir, between American Crow Creek and Campbell Creek, in the general vicinity of Chamberlain, S. Dak. An unusual abundance of tributary streams and wide bottomland in this section apparently account for its popularity with explorers, fur traders, military commanders, and Indian agents. Here on the "Oacoma Bench" was the Camp Pleasant of Lewis and Clark, where the Captains spent several days in October 1804 to rest and overhaul their gear (Lewis and Clark, 1904, pp. 149–155). Here, beginning in 1812 or earlier, was located a whole succession of trading posts which also served as outposts of the expanding American Territory, strongly influencing the course of western history for four decades. This section was also the locale of three military posts and as many Indian agencies during the precarious period when the cantankerous Sioux tribes were making their first sullen efforts to become civilized.

Most important of the trading posts in this group was Fort Recovery, reputedly on American Island, originally Cedar Island. It was supposedly so named as the successor of the 1812 Fort aux Cedres of the Missouri Fur Co.; however—much to the confusion of historians—it enjoyed several aliases, among them Cedar Fort, Fort Brasseaux, and Pilcher's Post (Chittenden, 1936, pp. 141, 922; Wilson and De Land, 1902, p. 326). Whatever one chooses to call it, research strongly suggests that, contrary to a widespread but careless assumption, this post was not on American Island but on the right bank of a creek near the foot of the island (Mattes, 1949, pp. 533–543). Established in 1822, this fort achieved distinction in 1823 as the base for the historic Ashley-Leavenworth campaign against the unruly Arikara, and was described in that year by Duke Paul of Württemberg (Württemberg, 1938, p. 432). Ten years later its passing was noted by another European traveler, Prince Maximilian of Wied (Wied-Neuwied, 1906, pp. 302–305).

Well fortified with documentary data, the Garth party searched intensively for signs of Fort Recovery, making numerous test squares and trenches in an ever-widening arc from the point hypothesized in the Mattes report. The negative results despite exhaustiveness of the search led to two possible conclusions: (1) that Fort Recovery had never been destroyed by fire but that the remains were painstakingly dismantled by the traders themselves, by Indians, or by steamboat crews, leaving no trace; or (2) that the actual site had succumbed to the Missouri River. Since the total disappearance of evidence at a site busily occupied for several years is scarcely conceivable, the second alternative is the more acceptable one.

Fort Lookout now engaged the attention of the historical-archeological reconnaissance party. Here the outlook was more hopeful since Fort Lookout remains were reported by local informants to be definitely in evidence. The only difficulty here was that this evidence was to be found in three different places. A partial explanation of this quandary was offered by a hypothesis in the basic report: despite the common historical assumption, the Fort Lookout trading post (1822–?) and the later Fort Lookout military post (1856) were two quite different establishments, probably at two different locations.

Fort Lookout military post was established on order of Gen. William S. Harney in 1856 and was built under the direction of Capt. Nathaniel Lyon. It was abandoned the following year (Meyers, 1914). It proved to be exactly where the records indicated it to be, on the south boundary of the present Lower Brulé Indian Reservation, at the lower end of a wide meadow now called the "Fort Hale

Bottoms." There was virtually no surface evidence of this post, which had been laid out on a rather ambitious scale, only to be completely dismantled upon its abandonment, and the materials used at Fort Randall, 100 miles downstream. After careful search, however, Garth located a concentration of military debris and accouterments on a slope about 200 yards back from the river bank, which was probably a dump. The fact that the military post site proved to be a few feet above maximum reservoir pool level, coupled with the multiplicity of other problems, led to the abandonment of this particular effort.

Research indicated that Fort Lookout trading post had a disconcertingly checkered career. It was established by the Columbia Fur Co. in 1822 and the following year it figured in the historic Ashley-Leavenworth expedition against the Arikara (Wilson and De Land, 1902; Chittenden, 1936, pp. 325–329; Frost, 1945, p. 37; Morgan, 1953, pp. 59–77). In 1825 it was the scene of a grand parley between the Sioux and members of the Atkinson-O'Fallon diplomatic expedition (Reid and Gannon, 1929, pp. 21–23). About this same time Fort Lookout (which, contrary to another common assumption, is identifiable with the "Fort Kiowa" of the fur traders) was taken over by the American Fur Co. In 1833 it appears in the journals of Prince Maximilian as an adjunct of the Upper Missouri or Sioux Indian Agency; at this same time Maximilian describes a second Fort Lookout or "French Post" a few miles downriver (Wied-Neuwied, 1906, p. 303). During the 1840's a "Fort Lookout" was occupied in desultory fashion by La Barge and other latter-day, small-time traders (Chittenden, 1903, p. 59; Mattes, 1949, pp. 540–541.)

Garth's explorations settled two things: first, that there was a trading post site on the river bank nearby, but not coincident with, the Fort Lookout military post; second, that the dimensions of this trading post were too small to identify it as the historic Fort Lookout-Fort Kiowa of 1825, hence it was the "French Post" Fort Lookout of 1833, or La Barge's Fort Lookout of the 1840's.

What happened to the famous Fort Lookout of 1825? After a most intensive reconnaissance of the Fort Hale Bottoms, coupled with a careful analysis of river meanders, Garth concluded that the Fort Lookout site of 1825 had been destroyed by river action. If Maximilian's Fort Lookout (alias Sioux Agency) of 1833 were identical with the fort of 1825, then it too had disappeared. Subsequent investigations were to substantiate this finding.

To minimize the confusion, the writer now holds to this solution of the Fort Lookout tangle:

Fort Lookout I	Alias Fort Kiowa, the post of 1823–25, apparently destroyed by river action.
Fort Lookout II	Maximilian's "French Post" of 1833, probably identical with La Barge's post of the 1840's, discovered by Garth in 1950.

Fort Lookout III	Maximilian's "Sioux Agency" of 1833, probably, but not certainly, identical with Fort Lookout I, in any event also destroyed by river action.
Fort Lookout IV	The military post of 1856 adjoining Fort Lookout, location confirmed by Garth in 1950.

One other important discovery was made in 1950. An unidentified historic site on the right bank, near Chamberlain, had been reported by a Smithsonian reconnaissance party; one local informant had mistakenly identified this as Fort Lookout military post. Excavation here revealed the hitherto unidentified remains of an establishment tentatively identified as Fort Lower Brulé, predecessor of Fort Hale, a military post established in 1870 to police the newly relocated Lower Brulé (U.S. Surg. Gen. Off., 1870, p. 410).

Garth also reconnoitered and confirmed the site of Lower Brulé Indian Agency, 1868–90, below the mouth of American Crow Creek (Andreas, 1884, p. 94); the site of Fort Hale, 1870–84, opposite the mouth of Crow Creek (U.S. Surg. Gen. Off., 1875; Hackett, 1916), nine-tenths of which had already been claimed by the Missouri River; and the site of Whetstone Agency, 1868–72, just above the mouth of the creek of the same name (Comm. Ind. Aff., 1868–84; Robinson, 1916, p. 99; Kingsbury, 1915, p. 808; Poole, 1881). An intensive search of the area around the mouth of White River failed to disclose the remains of anything resembling a trading post, thus tending to confirm the writer's belief that the historical concept of a Fort Brasseaux at White River was erroneous.

In 1951 Carl Miller intensively excavated the site of Fort Lookout II, finding two historic levels that fit the variable descriptions of Maximilian's "French Post" and La Barge's Fort Lookout, both establishments of modest proportions in comparison with the historic Fort Lookout I of the 1820's. Debris from this site, while scantier than anticipated, will aid in studies of the material and crude architecture of the little-known commercial outposts of the Upper Missouri.

During this same season, G. Hubert Smith conducted limited excavations at the site of Fort Stevenson (1867–83), destined to lie under 200 feet of water behind the gigantic Garrison Dam (Mattison, 1951; Kane, 1951). Although less than 25 percent of this site was excavated, no further work here was deemed necessary. Findings confirmed the general accuracy of building plans preserved in the National Archives; and an excellent collection of objects of the military period was made, insuring the salvage of authentic remains for the information of future students. This project was complicated by the fact that Fort Stevenson was taken over by the Bureau of Indian Affairs, and used as an Indian boarding school until 1893. The debris of this latter episode was liberally intermixed with the military.

In 1951 Smith, accompanied by historians Mattes and Mattison, also reconnoitered the site of Like-a-Fishhook Village of the Mandan-Hidatsa-Arikara alliance, the locale of Fort Berthold I (1845–62) and II (1858–ca. 1885) (Comm. Ind. Aff., 1868–94; Kane, 1951; Taylor, 1932; Mattison, MS.) In 1950 Glenn Kleinsasser of the North Dakota Historical Society conducted limited excavations in the remains of the Indian village. In 1951 James H. Howard, his succesor, did likewise.

Smith also reconnoitered the alleged site of Kipp's trading post of 1828, at the mouth of White Earth River, and confirmed the location of this little-known post (Chittenden, 1936, p. 957; Will and Hecker, 1944, pp. 8–12).

In 1952 Smith returned to tackle the excavation of one of the principal historic features of Garrison Reservoir, Forth Berthold II—trading post, Indian agency, military post, and focal point of the great village that was the final refuge of the Three Tribes from the assaults of smallpox and the Sioux.

While Smith and Howard were entrenched at Fort Berthold, John E. Mills instituted mopping-up operations (as far as historic sites were concerned) in the Fort Randall area. Mills carefully reviewed the work of Garth and Miller at Fort Recovery, Fort Lower Brulé, Fort Lookout II and IV, and Fort Hale, and contributed supplementary data. He confirmed the negative findings at the mouth of White River, and made a fruitless search for any evidence of Bijou's, or Bisonette's, trading post of 1812, opposite old Rosebud Landing. Since the Fort Recovery-Fort Lookout area seemed to have yielded all the information it had to offer, he then moved back downriver.

Whetstone Creek was the locale of Whetstone Indian Agency and a stockaded Fort Whetstone, outpost of Fort Randall. The only thing left in sight to go on was the creek itself, plus one or two suspicious depressions in a wheatfield. Ground plans from the National Archives and historical sources indicated a rather extensive village with cottonwood log construction dominant. Mills reconnoitered the area and tested it intensively, at first with disappointing results. It was several weeks before the outline of a stockade was encountered; this proved to be the post corral. The fort itself was not in evidence and there was relatively little else that could be linked to Spotted Tail's occupancy. This was bottomland, and alternating sheet-erosion and siltation seems to have effectively obliterated the bulk of the remains.

From Whetstone, Mills moved to the immediate vicinity of old Fort Randall itself. He took up quarters in a building, condemned by the Corps of Engineers, which proved to be the remnant of an officers' quarters. The main area of the fort, a mere stone's throw from the downstream toe of the rising Fort Randall Dam, contained the rather well-defined outlines of the structures that once graced the perimeter of the parade ground. There was no mystery as to the whereabouts of the buildings, and the site would not be destroyed by reservoir or outlet works. The only part of the fort in jeopardy was a piece of bottomland that would be covered by a rock apron for channel stabilization. In 1950 Mattes and Garth had found surface debris here that clearly indicated some kind of occupancy, although no features were clearly identified here on any available ground plans. However, in 1952 only one structure was located in this area. This proved to be a brickkiln, probably of the boom construction period of the early 1870's.

In 1953 no historical salvage work was accomplished, this being a casualty of a further decreased budget. In 1954, however, archeologists returned to Like-a-Fishhook Village, the Fort Berthold area, under rather dramatic circumstances. It was long recognized that there was an exceptional concentration of archeological values here, a grand intermixture of late Upper Plains Indian and frontier white cultures. Several seasons of excavations had exposed numerous earth-lodge sites, and a portion of Fort Berthold II; but several unsolved problems remained regarding the latter post. Furthermore, no trace had yet been found of the primary site, Fort Berthold I.

It was with dismay, therefore, that the salvaging agencies learned in the early spring of 1954 that the level of waters impounded behind Garrison Dam was steadily approaching the 1,750-foot mark, where sat doomed Fort Berthold. Two steps were taken immediately: to concentrate all possible available funds and resources as early as possible in an effort to complete vital archeological research at the site, and to request the Corps of Engineers to slow down the Garrison rise long enough to achieve this goal. Through excellent four-way cooperation, this operation met with complete success.

After mature consideration of the delicate issues involved, representatives of the Division Engineer, Missouri River Division, Corps of Engineers, agreed with the National Park Service to a plan to divert a larger volume of the spring rise to the Fort Randall Reservoir, and retain more water in Fort Peck Reservoir than normally planned, in order to slow down the Garrison's rise by at least 10 days, or until July 1. Meanwhile the Smithsonian Institution and the State Historical Society of North Dakota, cooperating with funds supplied by contract through the National Park Service, pooled their manpower, equipment, and camping facilities for a "last chance" attack upon Fort Berthold.

Archeologists G. Hubert Smith and Alan R. Woolworth, of these respective institutions, made excellent headway, assisted by reservation Indians (descendants of the Like-a-Fishhook Villagers) and a power scraper rented out by the Corps of Engineers. The net result was additional information concerning Fort Berthold II, and the triumphant discovery of the remains of Fort Berthold I, as well as the rambling village stockade. All this was spurred on by knowledge that approaches to the site (as well as dry exits therefrom) would be flooded before the trading-post area itself went under water.

After the Fort Berthold finale Woolworth, accompanied by W. Raymond Wood, went 90 miles upriver to the site of Kipp's trading post, which Smith's reconnaissance party had positively identified in 1952. Here again a bulldozer was summoned, the site leveled, charred stockade walls exposed, and substantial data were recovered.

That completes the historic sites salvage picture to date.[5] If sufficient funds are forthcoming for additional work in this department before the impoundment of waters in Oahe Reservoir, there are several major sites there that should be tackled. Notable among these are the site of Fort Manuel Lisa, on Hunkpapa Creek just below the south boundary of North Dakota, abandoned because of frontier hostilities during the War of 1812, and the probable burial place of Sacagawea of Lewis and Clark fame (Mattison, 1953 b; Drumm, 1920; Robinson, 1924); the site of the second Fort Sully, 1866–84, on a high bench not far above the Oahe Dam, among the major military posts of the Dakotas (Hoekman, 1952; U.S. Surg. Gen. Off., 1875); the closely related sites of Cheyenne River Indian Agency Post I and Fort Bennett I and II, on Agency Creek, about 7 miles upstream from Fort Sully, 1870–91 (Mattison, 1953 b; U.S. Surg. Gen. Off., 1875; Comm. Ind. Aff., 1870–92); Grand River Agency, 1865–73, predecessor of the Standing Rock Reservation Agency at Fort Yates, just above the Grand River, near Mobridge (U.S. Surg. Gen. Off., 1875, pp. 408–409; Comm. Ind. Aff., 1868–73); and the nearby sites related to the hostilities of 1823 between Arikara Indians and the forces under Colonel Leavenworth, General Ashley, and Sioux allies, an encounter that forced the fur traders to explore overland routes to the Rocky Mountains, changing "the course of empire" (Mattison, 1953 b; Morgan, 1953, pp. 42–77; Robinson, 1902).

By this joint program of the Smithsonian Institution and the National Park Service, involving a combination of historical and archeological scholarship, new light is being thrown upon the early, much-obscured history of the Upper Missouri River, the first great route across the American continent.

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[5] The excavations at Fort Pierre II, Paper No. 18, this bulletin, were carried on and completed after the present paper was written.

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SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 176

River Basin Surveys Papers, No. 16

Historic Sites Archeology in the Fort Randall Reservoir, South Dakota

By JOHN E. MILLS

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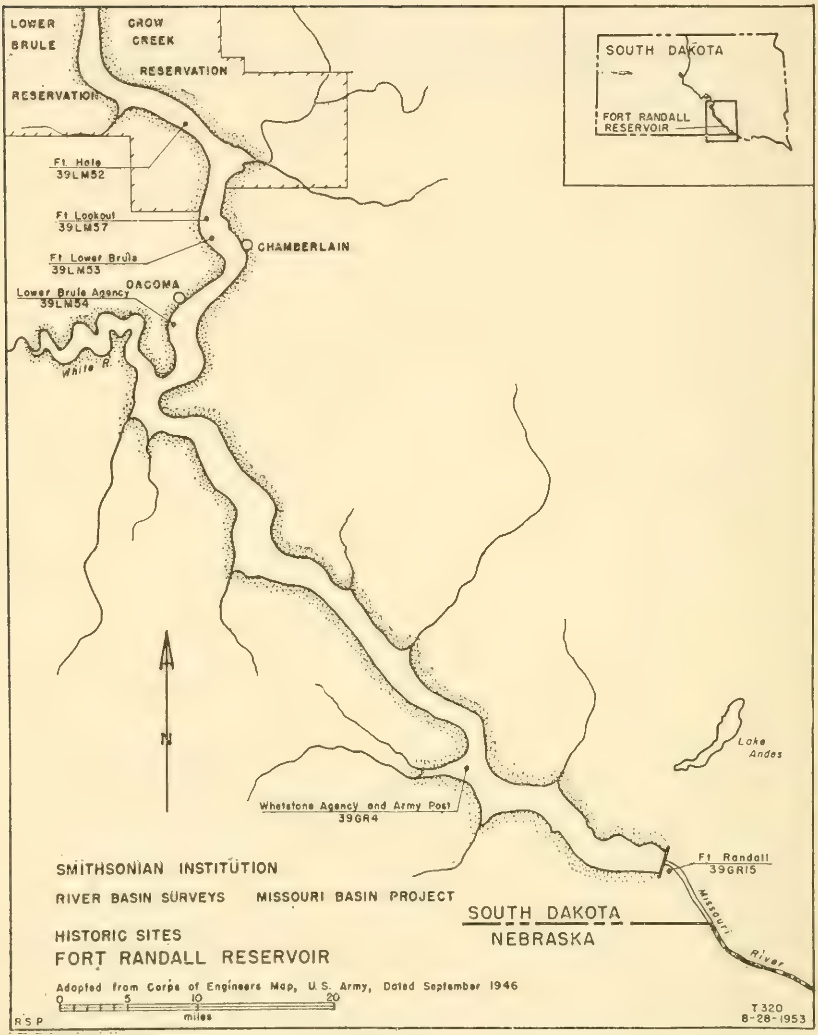
LOWER BRULE RESERVATION
CROW CREEK RESERVATION
SOUTH DAKOTA
FORT RANDALL RESERVOIR
Ft. Hale 39LM52
Ft Lookout 39LM57
Ft Lower Brule 39LM53
OACOMA
Lower Brule Agency 39LM54
CHAMBERLAIN
White R.
N
Lake Andes
Whetstone Agency and Army Post 39GR4
Ft Randall 39GR15
Missouri River
SOUTH DAKOTA
NEBRASKA
SMITHSONIAN INSTITUTION
RIVER BASIN SURVEYS MISSOURI BASIN PROJECT
HISTORIC SITES
FORT RANDALL RESERVOIR
Adopted from Corps of Engineers Map, U.S. Army, Dated September 1946
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Map 1.—Map of the Fort Randall Reservoir area showing historic sites under investigation.

HISTORICAL SITES ARCHEOLOGY IN THE FORT RANDALL RESERVOIR, SOUTH DAKOTA[1]

By John E. Mills

INTRODUCTION

This report is a summary of the field activities concerning historic sites archeology in the Fort Randall Reservoir, S. Dak., undertaken in years 1947–52. It is not offered as a final work but is essentially a summary progress report of reconnaissance and excavation of several historic sites in this area.

The work has been conducted as a part of the Inter-Agency Archeological and Paleontological Salvage Program under the direction of Dr. Frank H. H. Roberts, Jr., Bureau of American Ethnology, Smithsonian Institution, Washington, D.C. The field activities at the Fort Randall Reservoir were operated as part of this program through the River Basin Surveys office in Lincoln, Nebr., and were conducted by Smithsonian Institution archeologists out of that office. The organization and background of this program for the recovery of archeological and paleontological remains from areas to be innundated by reservoirs constructed by the Federal Government have been published elsewhere and will not be detailed here.[2] The fieldwork reported here was based principally on past and continuous researches by the Region Two Office of the National Park Service. The analysis of the history of the area by Merrill J. Mattes, regional historian of that office,[3] comprised the basic groundwork upon which archeological reconnaissance and excavations by Smithsonian Institution parties were based.

The Fort Randall Reservoir, on the Missouri River in South Dakota, was planned and constructed by the Corps of Engineers, United States Army. The site of the dam is in Charles Mix and Gregory Counties, 6 miles north of the Nebraska line and 7 miles south of Lake Andes (map 1). The dam is an earth-filled structure approximately 170 feet high and 10,000 feet long. At the maximum pool level the impounded waters will back up almost 100 miles to the Big Bend of the Missouri, inundating an area of 108,000 acres in Charles Mix, Gregory, Brulé, Lyman, and Buffalo Counties.

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[1] Submitted May 1953.

[2] Smithsonian Miscellaneous Collections, vol. 107, No. 6, 1947; American Antiquity, vol. 12, No. 4, pp. 209–225, 1947; Smithsonian Institution Annual Report, pp. 351–383, 1951.

[3] Mattes, Merrill J.: Project report on historic sites in the Fort Randall Reservoir area, Missouri River, June 1948. Mimeographed report of National Park Service. See also Mattes, 1949.

The Missouri River in this area occupies a flat-floor trench, 1 to 2 miles wide, bordered with high bluffs that are moderately dissected and profusely eroded into gullies. The only major perennial tributary entering the reservoir is the White River, 11 miles below Chamberlain on the right bank of the Missouri River. The timber of the flood plain and valley floors is chiefly cottonwood, willow, and cedar. The bluffs and uplands, where not under cultivation, consist primarily of prairie grasses. Small game animals are plentiful but the great herds of bison, antelope, and elk that once roamed over this area are now extinct.

In the latter half of the 18th century, the Missouri River became the approach outlet to the western prairies of North America. The white traders using it as a travel route from St. Louis were first led by a Frenchman, Jean Baptiste Trudeau. Fur-trading posts were established along the river banks, and one of the earliest of these posts was located by Trudeau, in 1794, at a point somewhere near the present site of Fort Randall Dam, possibly 2 to 3 miles downstream. Trade was conducted in this area with the Omaha and Ponca tribes, and farther north with the Yankton and Teton Sioux.

Exploratory expeditions followed the initial establishment of the fur posts. These were led by Lewis and Clark in 1804, and Astor and Lisa in 1811, and the Lisa-Immel party used the same route in 1812. By the 1820's the Ashley party had traversed the waterway; General Leavenworth had led a military expedition to subjugate the aborigines living in the Upper Missouri, and the famous Prince Paul of Württemberg had visited the area on his continental journey.

Following the Atkinson-O'Fallon expedition of 1825, the Fort Randall Reservoir area remained one of trade exploitation that saw relatively harmonious relations maintained between the Indians and traders until 1855. This latter year marked the establishment of military posts along the Missouri, Fort Pierre at Pierre, S. Dak., and Fort Randall in South Dakota near the Nebraska border. The military occupation, first led by General Harney, in 1855, was to last on the Upper Missouri until the 1890's. Indian agencies were established in conjunction with many of the military posts—Whetstone was both agency and military camp; Lower Brulé Agency was protected by Fort Lower Brulé; Fort Hale (formerly known at Fort Lower Brulé) and Fort Lookout were located north of Chamberlain to protect the white settlers from the Sioux and, theoretically, safeguard the rights of the Indians on the reservations (map 1). These sites were examined in the course of the salvage program between the years 1947 and 1952, inclusive, primarily to attain a better understanding of the circumstances surrounding life at posts and agencies of this sort that played such an important part at so crucial a time in the development and westward expansion of the American frontier. Six sites were examined: Fort Hale, Lower Brulé Agency, Fort Lower Brulé, Fort Lookout, Whetstone Agency and Army Post, and Fort Randall. Excavations were carried on at the latter four of these. A description of the results of these examinations and excavations is outlined in the following pages.

FORT RANDALL (39GR15)

INTRODUCTION

Fort Randall was established in 1856 and garrisoned that year by the Second Infantry and Second Dragoons.[4] The original post was replaced by one of new construction between 1870 and 1872. Fort Randall played a key role in the hostilities which followed the Minnesota Sioux uprising in the early 1860's, in the Black Hills gold rush of the 1870's, and in the Dakota land boom of the 1880's. It was a major supply base for upriver and inland military posts, and a symbol of law and order to the restless Sioux and Ponca Indians on Dakota Territory reservations. The post was officially abandoned in 1892.

The only standing structures of Fort Randall remaining today are the Fort Randall church and an officers' quarters building. The church was built in 1872 by soldiers of the post and was used as a chapel, library, and Odd Fellows Hall. The rear section of the officers' quarters building is reputed to have been used as a part of the post morgue. This building, formerly located near the post parade ground, was moved by early settlers at the turn of the century, according to local informants, to the south side of Randall Creek, some half a mile or so to the south.

In the summer of 1950 the ruins of Fort Randall were examined by a reconnaissance party led by Thomas R. Garth. An area of concentrated surface refuse in the southeastern marginal area of the military post ruins was recorded as site 39GR15. At that time scattered brick, glass fragments, chinaware sherds, and portions of a trade pipe and clay pipestem were collected from the surface. This site was thus identified as being of white provenience, and indications pointed to its being a part of the Fort Randall military post or at least to its being associated with that post. Further evcavation was therefore recommended owing to the possibility of the destruction of the site resulting from construction activities at the Fort Randall Dam, nearby.

The site is located in the center of a bottomland cornfield, surrounded by a large stand of cottonwood, one-half a mile south of the Fort Randall Dam. It is on the first terrace of the right bank of the Missouri River in Gregory County, S. Dak.

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[4] Documentary data pertaining to military posts and Indian agencies utilized in this report have been abstracted from Mattes, 1949, pp. 470–577.

EXCAVATION

During the summer of 1952 the writer and a party of six conducted archeological excavations in the area of site 39GR15 for a period of 4 weeks. The structural remains excavated, a brickkiln, indicated temporal and physical association with the Fort Randall military post. The main excavations were undertaken in a low hummock area located near the center of the cornfield. This area was marked by a surface concentration of broken brick (pl. 1, *a*) and a marginal distribution of glass, chinaware, and metal fragments. A small ground elevation 160 feet north of this hummock was also investigated but proved to be sterile of cultural remains.

Structural features were located immediately below the topsoil of the hummock. Two parallel rows of brick were uncovered, each 24 feet long and separated from each other by a 9-inch width of sterile clay. The northernmost row was formed by alternating patterns of brick, lateral sides together or butt ends positioned against lateral sides (fig. 1). The succeeding fragmentary rows to the south were of single pattern, the brick joined with lateral sides together

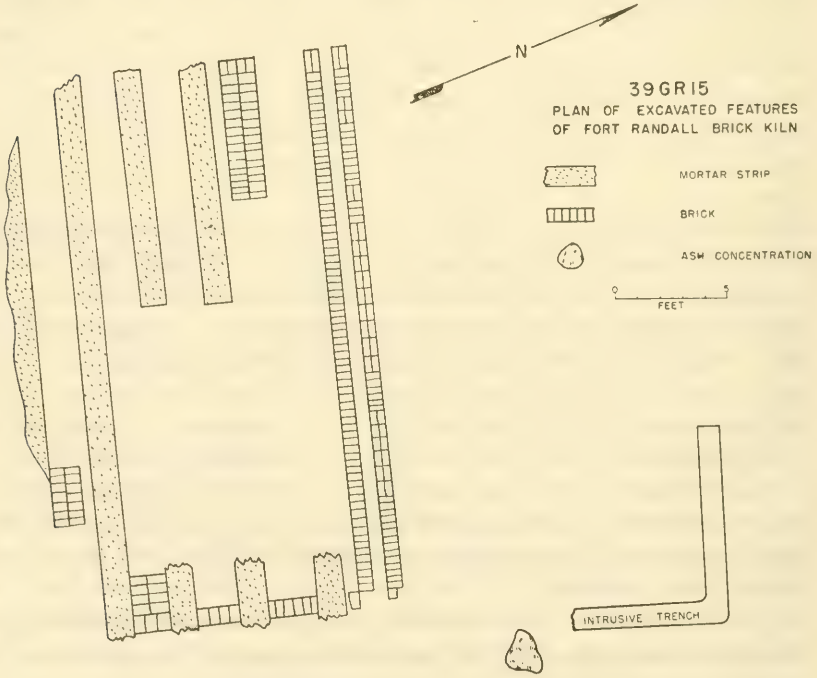

FIGURE 1.—Site plan of the Fort Randall brickkiln showing locations of the various features

(pl. 1, *b*). The total number of brick rows, whole or fragmentary, numbered five.

The brick rows were separated by five whole or fragmentary mortar strips (fig. 1 and pl. 2, *a*). The one nearly complete strip was 1 foot in width, 25 feet long, and about 2 inches deep. The latter measurement is an approximation, as the underside of the mortar strip was somewhat decomposed.

An intrusive right-angle trench was located 7.5 feet north of the northernmost rows of brick (fig. 1). The south and west arms of the trench indicated its association with the brick-mortar area. It was not possible to determine the function of the trench but it appears to have been a feature the construction of which was never completed.

Beneath the brick and mortar strips the earth showed evidence of baking from fire for about 6 inches (pl. 2, *b*). One puzzling feature of the site, however, was the absence of a firepit or furnace that functioned as the heating unit for the brick making. The burned earth adequately demonstrates the overall heating of the floor area and the fire was spread in an area contiguous to the burned earth. Yet there is no direct evidence (i.e., ash layers, furnace foundations, or charcoal) that would locate the fire center. The bricks found in situ probably represent the last production of brick in the kiln. The function of the mortar strips remains unknown, as comparative data are lacking.

ARTIFACTS

Few artifacts were recovered from the site. One center-fire shell of .44 caliber (pl. 8, *n*) with copper primer and brass case can be assigned to the .44-caliber Colt magazine rifle or revolver or to the Winchester .44-caliber rifle. This would date the shell in the 1870's. A blowout on the side of the case had apparently failed to fire the bullet. A conical bullet of .58 caliber was found (pl. 8, *m*). This type of specimen fits the following description abstracted from an article by Dr. Carlyle S. Smith (Howard, MS., Appendix V, pp. 75, 76):

> This is the regulation U.S. Government bullet for use in the muzzle loading rifled muskets Model 1855, 61, 63 and 64. It was known popularly as the "minie ball", named for the French inventor of the hollow base bullet, Minie. They were not widely used by the Army until after 1856 when it became the standard bullet for nearly all the regular infantry regiments. It was used for a long time after the Civil War by Indians and other people who could not afford or otherwise acquire a more modern breech loading gun.

A lead shot (pl. 8, *g*), 16 mm. in diameter, is nondiagnostic, as this type ball was used in muzzle loading in pre- and post-Civil War days. Three buttons (pl. 9, *b–d*) are also of indeterminate date, these forms being used on military clothing into the 20th century. A fired clay pipe fragment (pl. 9, *e*) is of a type made in Europe in the post-1850's. The fired clay boot model (pl. 9, *a*) was probably made by one of the brickkiln workers. Some of the bricks that litter the surface area about the ruins of the fort were manufactured in St. Louis, as is indicated by their trade mark. Bricks from this commercial center were brought to Fort Randall early in its history, as is evidenced by the records in the office of the Quartermaster General:[5]

> Among the shipments to Fort Randall in 1856–57 from the Quartermaster Office at St. Louis was one of 5,000 bricks. A letter of February 20, 1857, from Col. Francis Lee, commanding officer at Fort Randall, to the Deputy Quartermaster at St. Louis proves that no brick making was in progress at that time, for Colonel Lee declared "I can't find any person in this command who understands making brick" and added "Even if the Clay here will answer the purpose," indicating uncertainty on that important point.

The remainder of the artifacts were fragmentary bottle glass, chinaware, and metal pieces of indeterminate origin and date.

SUMMARY STATEMENT

The brickkiln excavated in 1952 at the edge of the historic military post of Fort Randall probably furnished structural materials for the building of parts of the original fort or for the rebuilt fort in its early period of construction. The brickkiln itself may be dated in the period after February 1857 but cannot be specifically restricted to either of the two periods of construction (late 1850's or 1870–72) at Fort Randall.

WHETSTONE INDIAN AGENCY AND ARMY POST (39GR4)

INTRODUCTION

The Whetstone Indian Agency was established in 1868 to serve the Brulé and Oglala bands of Sioux that had been transported to Dakota Territory from the Fort Laramie region. The Brulé remained but a short time at the agency and finally established their main camp on the White River 60 miles west of Whetstone. The Indians at the agency in 1869 numbered 1,000 and were under the leadership of Chiefs Swift Bear and Big Mouth. By 1870 there were 4,500 Indians drawing subsistence from the agency.

Military troops from Fort Randall were stationed at Whetstone Army Post until 1872. The military post (pl. 3) was built of cottonwood timbers obtained from nearby Whetstone Island. Following its military abandonment, this military post became a depot for transportation of supplies to the Red Cloud and Rosebud Indian Agencies to the southwest.

The first reconnaissance of the site of Whetstone Indian Agency and Army Post was made in 1947, by a Smithsonian Institution field party led by Paul L. Cooper. A second Smithsonian Institution field party visited the site in 1950 under the leadership of Thomas R. Garth. Surface indications during these two investigations consisted of small depressions in the ground and glass, iron, and crockery fragments. The site was thus identified as one of white provenience and the geographical area was identified as the location of the Whetstone Indian Agency and Army Post.

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[5] Personal communication from Alvin P. Stauffer, Office of the Quartermaster General, Department of the Army, February 20, 1953.

The site is situated in a cultivated field on the first terrace of the right bank of the Missouri River, one-half a mile north of the confluence of Whetstone Creek and the Missouri in Gregory County, S. Dak. (map 1). A stand of cottonwood, scrub oak, and ash surrounds the site. The Missouri River lies 300 yards to the east of the army post remains. To the west is a stretch of wooded area bordered by cultivated fields of wheat and barley. North of the site, across a narrow channel of the Missouri River, lies Whetstone Island, covered with a growth of cottonwood and cedar. Whetstone Creek, 800 yards south of the site, flows from the west to empty into the Missouri. The terraces on the west side of the river are relatively level in this area but are quite precipitous on the east side of the river.

This area lies in a climatic zone that is marked by the extremes of summer heat and winter cold and rapid fluctuations in temperature. Temperatures of 100° F. and higher are not uncommon from June to September, accompanied by high humidity, making living conditions particularly unpleasant. Conversely, from November to March, below zero temperatures often prevail. Heavy snowfalls, however, are unusual and the normal snow cover is less than 2 feet. The post was relatively free from drifts, as it was protected from the wind by a timber stand on all sides. Normally, three-fourths of the annual precipitation is distributed from April to September. November and February are the driest months. Military road travel would have faced definite restrictions during the heavy rainfall months, for the bottomland roads are quite impassable during and immediately following the heavy rains.

EXCAVATION

During the summer of 1952 the writer and a party of 10 conducted archeological excavations at the site of Whetstone Indian Agency and Army Post for a period of 8 weeks. The Missouri River flood of 1952 had, only a few weeks before, covered the area with a foot of new silt. In order to relocate the artificial terrain features that had been noted during the reconnaissance of 1950, it was necessary to test-pit an area 1 mile square. This testing produced cedar-post remains and a portion of a former stockade wall. The military post ground plan, drafted in 1870, indicated two areas surrounded by stockades of cedar posts. One was the army post proper (pl. 3) and the other was a corral stockade (fig. 2). The area thus located by testing was the latter of these two and no evidence of the former was found either in the tests or the excavations. This negative evidence resulting from considerable testing and searching probably indicates the removal of post buildings and stockade timbers by the settlers of the 1870's.

Following the discovery of the corral stockade, an exploratory trench 92.5 feet long (pl. 5, *b*) disclosed a row of cedar-post butt remains bisecting the north-south axis of the cultivated fields. The bottom of this trench was 2.5 feet below the existing surface of the field. The original depth of the trench in which the posts had been set is unknown owing to the disturbed condition of the ground resulting from 20 years of cultivation and the recent flood damage. This proved to be the north wall of the corral area and had been destroyed by fire, as indicated by the charred remains of the proximal ends of the posts. Continued excavation of the area to the south of this north wall provided a clearly defined trench (pl. 4, *a*, and fig. 2) that formed an irregular rectangle surrounding the confines of the site. This trench, 2.5 feet deep, averaged 1.3 feet in width. It was 102.5 feet in length on the north side and 100.5 feet in length on the south side. The west side was 24.0 feet in length and the east side was 26.0 feet in length. These dimensions coincide closely with those indicated on the ground plan of Whetstone Indian Agency and Army Post as being the stockade that enclosed the corral, stables, teamster grounds, and harness shop.

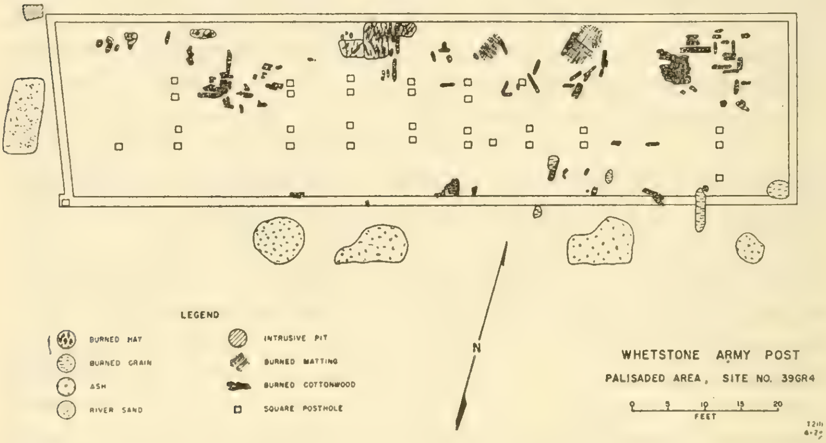

FIGURE 2.—Site plan of the Whetstone Indian Agency and Army Post, corral area, showing locations of the various features.

It was only in the north wall and southeast corner of the stockade that post remains were found. The absence of post remains in the trenches of the east, south, and west walls may be due to their removal by the settlers of the 1870's for fuel and building material. The north wall was probably left standing to form a windbreak for the supply depot that was established on the site after the abandonment of Whetstone Army Post by the military in 1872. The subsequent destruction of this wall by fire may have come about at any time thereafter. The neat rectangular shape assumed by the stockade wall on three sides was offset by the west wall, which was angulated enough to break the rectangular pattern (fig. 2). This departure from right-angle corners as found in the northwest and southeast corners was confusing at first discovery but the reason became apparent upon further excavation. The laborers—soldiers or Indians—cutting the trench to set the cedar posts, had run into a deposit of river sand (pl. 4, *a*) 8.5 feet south of the northwest corner. They were forced to angle the trench line inward to seek firmer ground, as the posts could not be securely set in this loose sand.

An intrusive pit, 5.0 feet square, was found outside the northwest corner of the stockade (fig. 2). This may have been an excavation placed in that corner to receive a support for an above-ground structure such, perhaps, as a blockhouse.

The southwest corner was a deviation from the other three corner forms in that it projected 0.8 feet beyond its union with the west wall. Centered in this corner were remains of a cedar post (pl. 4, *b*) the fragmentary charred proximal end of which was studded with square-cut nails.

Bone fragments, found in the east and south walls, possibly evidence tamping for cedar posts in the stockade line. Outside the south wall were four areas of ash concentration. These probably represent dumps where ashes were disposed of when the firepits within the stockade were cleaned out.

Archeological evidence of interior structures (fig. 2) indicates that they were made of cottonwood. All the wood was burned, probably in the same conflagration that had destroyed the north stockade wall. The burned remains were spread from the east to the west wall, with the largest clusters in the northeast and northwest sectors. Large quantities of square nails were recovered on and underneath the timbers. They had been used to tag the timber forms together. The quantity and position of the burned remains indicate that these had been small structures built against the north stockade wall. The structures were erected after the ground plan was made, as they are not indicated as a detail of this plan. Thus they represent a late period of construction in the army post, or were built during the activation of the supply depot that followed the military abandonment of Fort Whetstone.

Patterned within the stockade walls were the remains of 30 postholes. The holes averaged 6 inches in diameter. The posts that were placed in these holes either supported a roof enclosing the stockade area, or were supports for individual structures.

In the north-central and western sectors of the excavation were found areas of burned hay (fig. 2). Southeast, on both sides of the south wall, were piles of burned grain. The presence of hay and grain is further substantiation that the excavation was conducted in the corral stockade area.

Burned matting was recovered in the north-central section of the stockade and is indicative of human occupation. The sod floors of habitation sites were commonly covered by mats, and the area of burned matting may mark the location of the former teamsters quarters.

ARTIFACTS

The greatest assortment of artifacts is classed in that type commonly found in historic sites, i.e., fragmentary glass, chinaware, and metal pieces. Most of the glassware can be assigned to broken bottles, though a few pieces appear to be fragments of windowpanes. If this latter assignment is correct, it would indicate that at least one of the structures in the corral stockade, perhaps the harness shop, had been equipped with glass windows.

Metalware was present in profuse quantities. Square-cut nails, spikes, strap iron, files (pl. 8, *c*), and iron rings make up the bulk of this material.

Culinary pieces are represented in a 3-tined fork fragment (pl. 8, *d*) and a wooden-handled knife (pl. 8, *e*).

Two cartridges bear manufacturers' marks on the bases. Both are .50-.70-caliber center-fire pieces, one marked 1-R-85-F (pl. 8, *l*), which means January-Rifle-1885-Frankford Arsenal. The other piece (pl. 8, *j*) has on its base 3-R-80-F (March-Rifle-1880-Frankford Arsenal). The shells were manufactured by the U.S. Army at Frankford Arsenal, Philadelphia, for military purposes. The .50-.70 was made for the U.S. Rifle, models 1866, 1868, and 1870. The dates on the cartridges recovered at Whetstone, 1890 and 1885, indicate that they were post-army period at the agency (1868-72) and can be assigned to the supply base era of the 1880's (Howard, MS., Appendix V). One other shell (pl. 8, *k*) is a .44-caliber center-fire piece, used in the .44-.40 Winchester, Colt Lightning Magazine Rifle or revolver. This cartridge type was manufactured in the post-1870's.

The textile pieces, floor or wall matting, and portions of a 3-ply rope were the only perishable artifacts recovered. All had been carbonized by the fire that destroyed the corral stockade area. Two of the matt pieces (pl. 9, *h*, *i*) are wickerwork weave, and another (pl. 9, *g*) is checkerwork.

SUMMARY STATEMENT

The corral-stockade area of the Whetstone Indian Agency and Army Post was excavated during the summer of 1952. Lack of post remains on three sides of the structure indicated partial destruction of the stockade, as such, following abandonment of the post by the military in 1872. Charred post remains in the north wall and general burning of the area suggest final destruction by fire while the site was being used as a supply depot. Burned straw and grain testify to the use of this area as a corral, and burned matting indicates the general area of the teamsters' quarters. Lack of any remains of the army post proper, though an extensive search was made, suggests that the buildings, timbers, and posts were removed by settlers during the 1870's or thereafter.

LOWER BRULÉ INDIAN AGENCY (39LM54)

This agency was established in 1868. A military post, located near the agency in 1879, was later moved upriver and renamed Fort Hale. By 1890 the agency had undergone considerable expansion and was apparently a thriving community. Most of the agency structures were moved upriver to the present Lower Brulé Subagency in 1892. Two of the buildings were relocated in Oacoma. One, a church, has since burned down, but the old agency headquarters building, now the residence of ex-Governor M. Q. Sharpe, still stands.

The site was visited by the Smithsonian Institution reconnaissance party in 1950 and revisited by the writer and party in 1952 (pl. 5, *a*). It is situated in a pasture bordering the right bank of American Crow Creek, on the right bank of the Missouri River, 1 mile southwest of Oacoma in Lyman County, S. Dak. (map 1).

Chinaware fragments, square-cut nails, and miscellaneous iron pieces indicated a site of white provenience. Two surface pieces collected were a knife handle and blade fragment (pl. 8, *b*) and a porcelain doll leg (pl. 8, *f*). Surface depressions, probably marking cellar depressions, were found scattered over the site. A graveyard was located on a knoll to the north of the site. Local informants stated that this graveyard had been associated with the agency and that the bodies had been disinterred and moved to the present Lower Brulé Agency, 22 miles upriver from the site.

Further investigations at this site were not recommended owing to the existing documentation already extant and to the fact that structures had all been moved elsewhere. An extremely extensive excavation would have been necessary, with the probability of a very small return in archeological or historical values.

FORT LOWER BRULÉ (39LM53)

INTRODUCTION

An army post was established in conjunction with the lower Brulé Indian Agency in 1870, at a location somewhere in the vicinity of that agency. The exact location of this post, known as Fort Lower Brulé, has not been definitely determined though considerable search for it has been made.

A reconnaissance party of the Smithsonian Institution, led by Thomas R. Garth, in the summer of 1950 located a site of white provenience in one of several suggested localities for this site. It is situated on the second terrace above the right bank of the Missouri River, 4.5 miles above Oacoma, in Lyman County, S. Dak. (map 1). Surface indications of the site included a series of low hummocks containing burned earth, charcoal, and artifacts of white provenience. It is highly probable that this is the location of Fort Lower Brulé, although positive identification as such is not at hand.

EXCAVATION

Immediately following the surface examination in 1950, Garth's party proceeded with test excavations at the site. A stripping operation begun on the largest hummock revealed a quantity of bright orange and red fragments of burned chinking. Imprints of round logs were found preserved in the burned chinking. The diameter of the log imprints varied from 0.58 to 0.75 feet and averaged 0.65 feet. The bark pattern indicated that the wood used was eastern red cedar and probably cottonwood.

Further excavation (pl. 6, *a*) revealed two units or rooms built 7 feet apart, and the space between them covered by a wooden roof. The dirt roof of the structure, after the fire had burned the rafters, had fallen on the burning floors below, smothering the fire and preserving many of the timbers in a charred state.

The floor joists were spaced 2 feet apart. These were indicated by square-cut nails that had held down the flooring and that projected up through the fallen roof dirt somewhat higher than the joists themselves. The nails as well as the other iron artifacts in the building ruin were badly corroded.

In the northwest corner of one room was a chalkstone fireplace (pl. 6, *a*). Between the back of the fireplace and the wall was a clay filling, a safety feature installed to safeguard the wall from fire. This living unit had been floored with oak planks that were 12 inches wide and less than 1 inch thick.[6]

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[6] Mr. Jack King, local informant, said that when he first homesteaded the site in the 1890's, a great many oak tree stumps covered the terrace. A sawmill is shown in this location on the 1890 Missouri River Commission map.

The structures connecting the living units had been enclosed by vertical planks, the butts set about 2 inches into the ground. These were indicated by narrow trenches along the east and west wall lines that contained bits of rotted wood. The east trench was broken by a space wide enough for a doorway, and this open area was covered with bits of fine gravel of the type that occurred in a pathway east of the building. This connecting structure must have had a dirt floor as there was no evidence of wood flooring.

In the other occupation unit a number of charred timbers were found in proximity to a probable chalkstone forge. These appeared to be roof timbers rather than supports for a wooden floor. The hard dirt floor was baked in some areas by the fire. This room may have been used as a blacksmith shop. The 5- x 4.1-foot chalkstone platform, about 8 inches high, may have been the forge. Three feet south of the forge was a 9-inch oak post that may have supported an anvil, and the remnants of what was probably a large water barrel, commonly associated with blacksmith shops, were still farther to the south (pl. 6, *b*). Here there was evidence of two iron barrel hoops and small portions of charred wood. There was a large amount of iron stock and tool fragments; the latter are represented by portions of a chisel, hoe, blade, axhead, wagon iron, and spikes. A door hook located in the center of the west wall may indicate an entrance in that vicinity.

Near the excavated building were found the remains of a well. The surface indication was a depression approximately 10 feet in diameter by 2.5 feet in depth. The outline of the well appeared in the darker fill when the top soil was removed. The well diameter was approximately 4 feet. Mr. King stated that he filled in the well in the nineties because it was a danger to stock. Thus the material in the upper part of the well is of a late date and was discarded. Below the 12-foot depth the oak cribbing in the well was still intact. This cribbing was made from a series of logs about 7 inches in diameter, split on the long axis and notched at the ends. The inside diameter of the cribbed section was 3.3 feet. The well measured over 18 feet in depth, but the exact depth was indeterminable because of the sand which seeped in from the sides with the water during the process of excavation. The well above the cribbing had evidently been walled with logs placed vertically and held by iron hoops.

The material in the lower 5 feet of the well was in excellent preservation. Fifty-eight ice gliders (pl. 7), an octagonal barrel of a buffalo gun, wagon irons, square-toed shoes, and window glass were recovered from that depth. The ice gliders are evidence of Indian activity near the site.

The one cellar excavated on the side was approximately 2.5 feet deep, 13.3 feet long, and 11.5 feet wide. The sandy walls were sloped to obviate the necessity of a wood or stone wall lining. There was some, but not definite, evidence of a fallen dirt roof. Artifacts were few, consisting of an earthenware crock, miscellaneous iron, and a charred cask lid. Two L-shaped hinge spikes found near the center of the north wall on the cellar floor may indicate a door in that area. There was no indication of wooden flooring in the cellar.

ARTIFACTS

The four .50–70-caliber, center-fire cartridges with inside fuses (pl. 9, *o–r*) were of the type used by the United States Army in the 1860's and 1870's. They were probably fired in an Allen alteration rifle. Another item related to army life was a hat emblem (pl. 9, *f*) or insigne of brass. The words "E Pluribus Unum" are inscribed above the head of an eagle with outstretched wings on this piece. A toothed hide scraper of iron was recovered that is similar in shape and notching on the working edge to the toothed bone fleshers of Indian manufacture. It was probably made in the blacksmith shop and may have been a trade item.

The octagonal gun barrel from the well was part of a percussion-type sporting rifle that shot a .50-caliber rifle shell and used a special percussion cap to ignite the charge. A 5-inch piece cut off the end of the barrel (pl. 8, *i*) was also in the well, and an iron butt plate (pl. 8, *h*) that was found near this piece may have been a part of the same gun.

The boot soles found in the well are the square-toed variety of the period. The heavy hoe blade had an iron collar at the top for insertion of the handle. A frying pan located in one of the building structures was similar to modern types except for the long handle with a handmade loop at the end.

The following information on the stoneware crock was supplied by G. Hubert Smith, Smithsonian archeologist:

> The stoneware crock or jar marked "Dakota City, N.T." was probably made at the Dakota City Pottery, operated by John B. Ziegler and Charles F. Eckhart as early as 1859. (The State of Nebraska was admitted in 1867.) As early as 1857, Samuel Whitehorn, previously a resident of Vermont and New York State, had opened a brick yard at Dakota City, which is said to have been the first "industrial enterprise" of the community. (A. T. Andreas, publ., *History of the State of Nebraska*, Chicago, 1882, pp. 612–613.) Whitehorn appears to have made brick for only one season, and there seems to be no mention of the manufacture of pottery in connection with the brick business. Elsewhere, potteries were in many instances developed independent of brick manufacture, sometimes by farmers who had acquired the skill.
>
> The date of the establishment of the Dakota City Pottery by the firm of Ziegler and Eckhart, which also operated a general store, is not known. Files of the *Dakota City Herald* preserved at the Nebraska State Historical Society begin with the year 1859, and the earliest advertisement of the firm found begins with August 13. Queensware is specially mentioned in this advertisement, but

it may be doubted that this was locally produced. The *Herald* for August 27, however, states that the steamboat *Omaha*, recently arrived from St. Louis, upon her return down river the following day took with her a large quantity of stoneware—about ten thousand gallons—from Ziegler and Eckhart's pottery. (The production of earthenware at this period was frequently given in terms of total capacity of pieces.)

Miscellaneous items include a three-tined iron fork, small three-cornered file, ax (pl. 8, *s*), and portions of a large corkscrew. Wagon part remains were the rub bar off a wagon box, the clevis (pl. 8, *a*) which couples the wagon tongue and doubletrees, iron hoop and bracing at the distal end of a wagon tongue, scrap iron from a singletree, strap iron and bolt combination to hold the sides of a wagon to the bottom, and chain links.

The ice gliders were found below the 15-foot depth of the well. They were made from deer, elk, or cow rib, and range from 11 cm. to 20 cm. in length. The whole specimens are blunted at one end and the butts are hollowed to allow the insertion of two thin-feathered sticks. Forty-five of the specimens lack any decoration but the others evidence incising of various forms. The predominant pattern, found on three and incipient on a fourth, is a series of diamonds placed end to end (pl. 7, *a*, *b*, *e*). On one specimen (pl. 7, *b*) the diamond pattern is cross-hatched. Another design is a series of incised triangles along one edge (pl. 7, *f*). The remaining geometric designs are a series of dots forming a triangle (pl. 7, *h*), or straight lines. One piece is notched along both lateral edges (pl. 7, *c*). Two and possibly a third specimen have more or less realistic representations. One of these pictures an actual ice glider, complete with feathers (pl. 7, *d*). Another represents a bird (pl. 7, *g*). One specimen has an hourglass design formed of a number of crossed lines with a featherlike representation on the rear of the design (pl. 7, *i*). The ice gliders were thrown with an overhand motion at a target. Their presence in the well may be due to this latter object's use as a target, and the gliders were lugged across the snow to its edges (Culin, 1907, pp. 399–420).

SUMMARY STATEMENT

A site of white provenience situated in one of the suggested locations of the site of Fort Lower Brulé was investigated. It yielded a rather large artifact inventory and considerable data concerning architectural details of a military post of the last third of the 19th century. A well in the yard also yielded a large and interesting series of a specialized type of Indian artifact—ice gliders. Proof is yet lacking that this is actually the site of Fort Lower Brulé established in 1870. However, on the basis of general location, general architectural features, and quantity of artifactual materials of the appropriate time period, it seems highly probable that this is the actual site of Fort Lower Brulé.

FORT LOOKOUT MILITARY AND TRADING POSTS (39LM57)

The site of Fort Lookout Military and Trading Posts was investigated in 1950 by a Smithsonian Institution reconnaissance party under the leadership of Thomas R. Garth. The two posts were assigned a single site number, as their locations were contiguous. However, it must be pointed out that Mattes' researches (Mattes, 1949) have indicated that the two, while situated contiguously, where slightly separate in location. Of course, they were also separate in time by more than a quarter of a century.

Site 39LM57, referring to both posts, lies in pastureland, bounded by two small streams, on the south boundary of the Lower Brulé Indian Reservation in Lyman County, S. Dak. (map 1). Further excavations were conducted at this site in 1951 by a second Smithsonian Institution field party, under the leadership of Carl F. Miller. The archeological data of Fort Lookout are reported by Miller, in Paper No. 17 in the present series of papers dealing with historic sites archeology. Miller also presents some documentary data supplemental to Mattes' previous reports and consequently details pertaining to this site need not be repeated here.

FORT HALE (39LM52)

Fort Hale, originally established at the Lower Brulé Indian Agency, was relocated on the first terrace of the right bank of the Missouri River, 13 miles upriver from Oacoma in Lyman County, S. Dak. (map 1). The site was investigated by a Smithsonian Institution reconnaissance party in 1950 under the leadership of Thomas R. Garth. At that time it was ascertained that most of the building sites and parade ground had been washed into the river. A number of cellar depressions were still visible as were also sections of graveled walkways that were raised a foot or more above the terrace plane. Artifactual materials collected here in 1950 by Garth consisted of wrought-iron nails, a strap hinge, a leather shoe sole, a glass button, a piece of cut bone, and miscellaneous fragments of iron, eathenware, china, bottle glass, window glass, and wall plaster.

The writer visited the site in the summer of 1952 and found that its last remnants had been destroyed by the Missouri River flood of the same year.

FORT RECOVERY

A site of major historic importance in the neighborhood of American Island near Oacoma is Fort Recovery. The historic references to this site are extremely confusing as has been demonstrated by Mattes' extensive documentary researches.[7] Erected during the first quarter of the 19th century, the establishment was known by various names such as Fort Recovery, Cedar Fort, Pilcher's Post, and Fort Brasseaux, to name a few. The post had considerable significance in the early history of the area in connection with the Leavenworth Expedition of 1823 and many other historic events of the time. However, documentary sources failed to pinpoint the location of the site.

In 1950, a Smithsonian Institution party under the direction of Thomas R. Garth made an extensive search for surficial features indicating the possible location of Fort Recovery. In spite of the intensive and extensive examination of the area by this party, the results were negative. The actual location is still unknown.

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[7] See footnote 3, p. 31.

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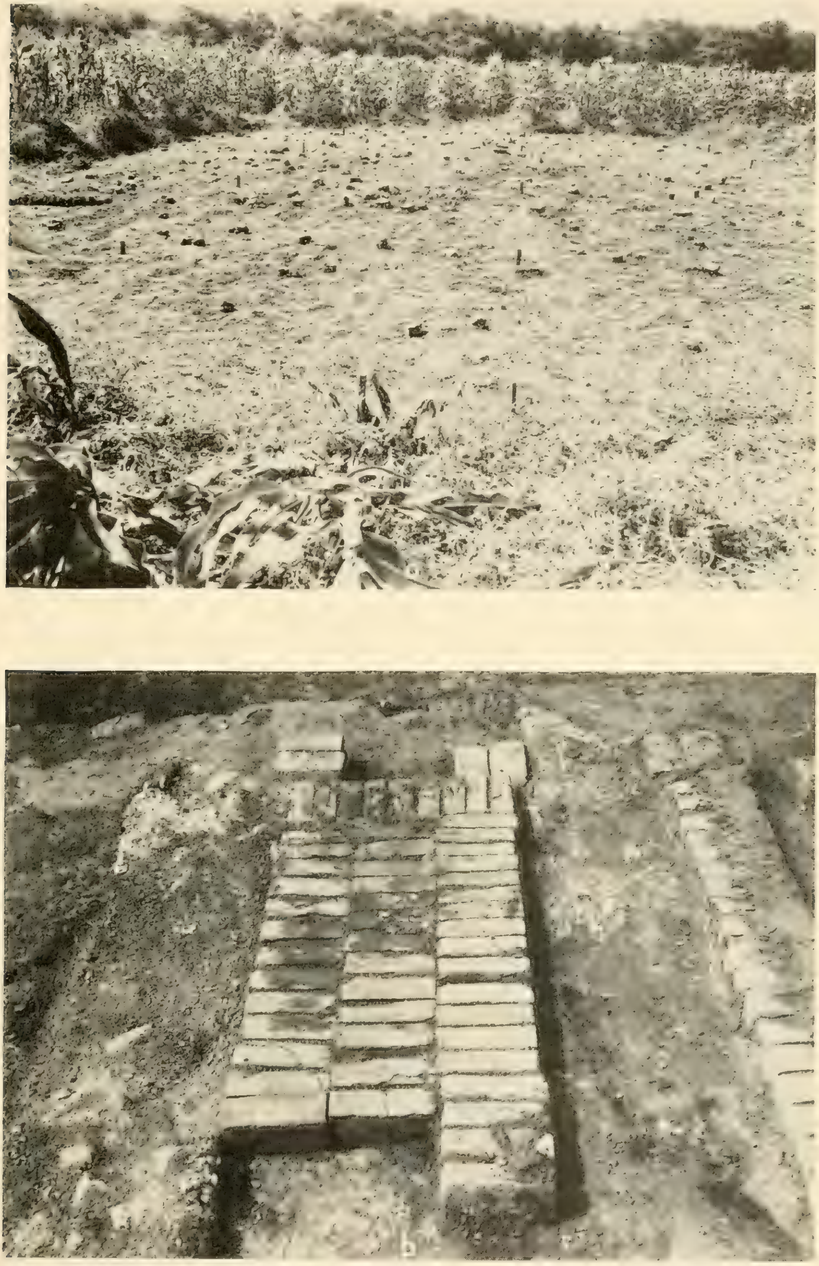
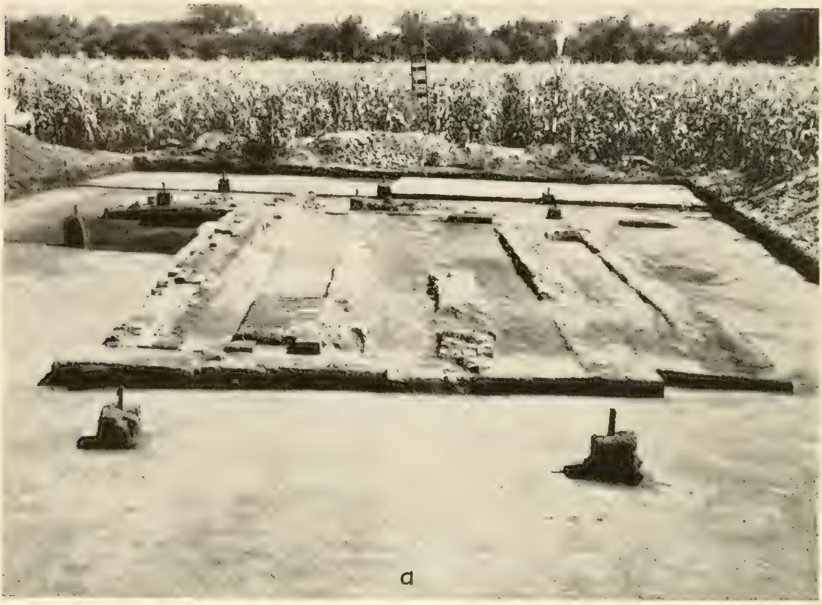
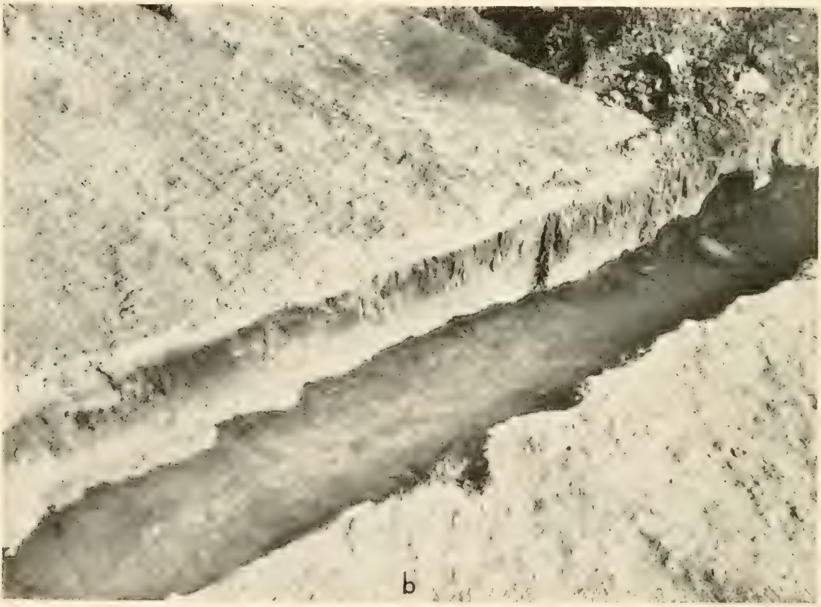
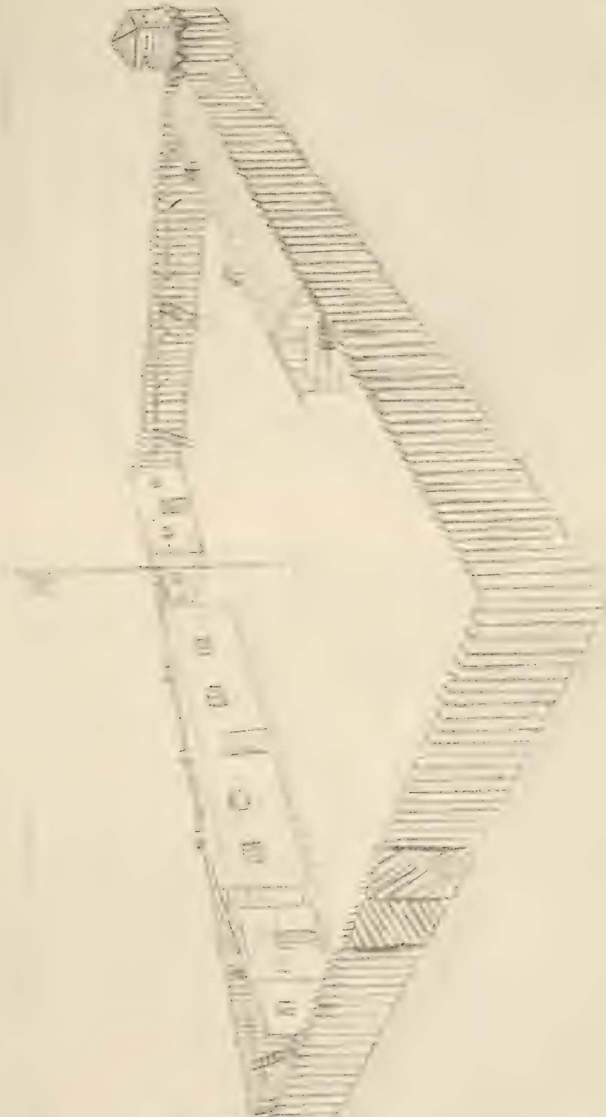


a, The surface of the Fort Randall brickkiln area before excavation. *b*, Some of the brick rows under the topsoil at Fort Randall brickkiln.



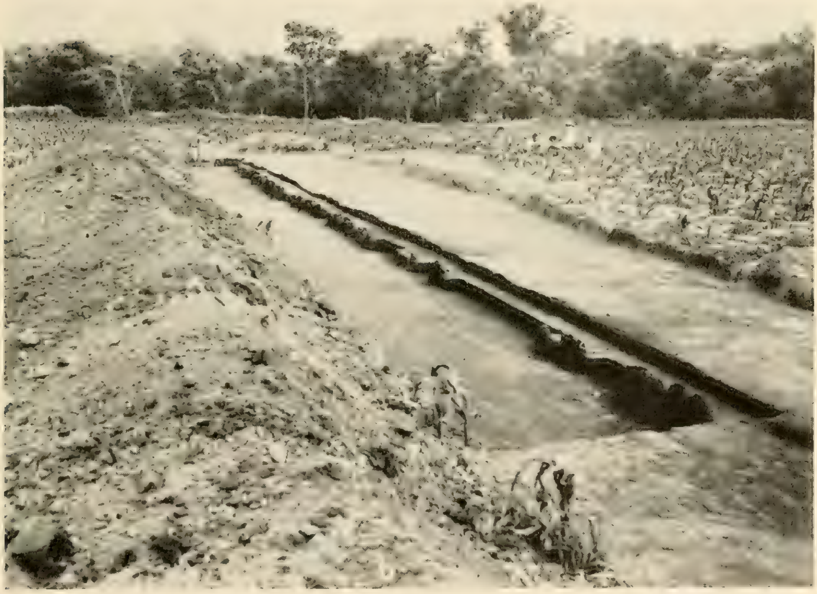


a, The Fort Randall brickkiln area after excavation showing brick rows and raised strips of mortar. *b*, Profile of the Fort Randall brickkiln area showing burned earth underlying physical remains of the site.

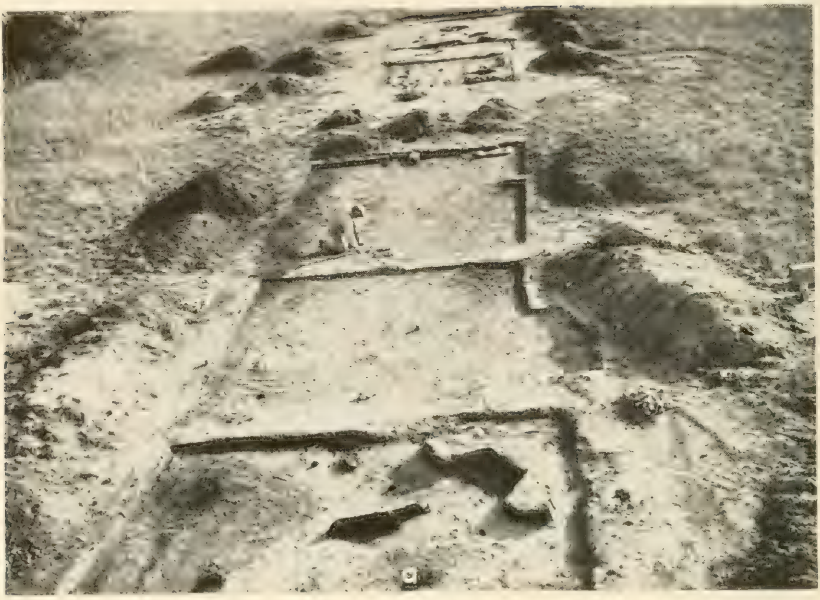


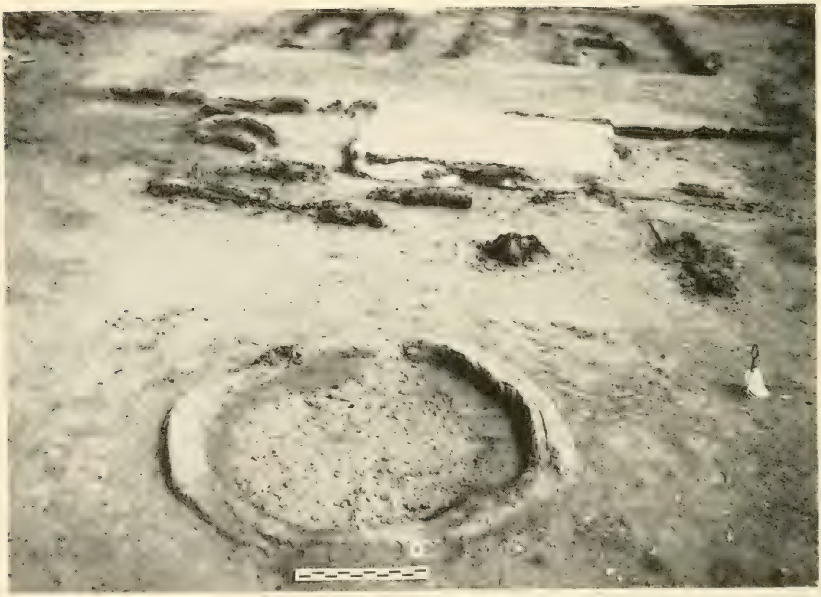
Drawing of probable appearance of the Whetstone Indian Agency and Army Post.

a, Trench line of the southwest stockade wall, Whetstone Indian Agency and Army Post. *b*, Remains of southwest corner stockade post, Whetstone Indian Agency and Army Post.

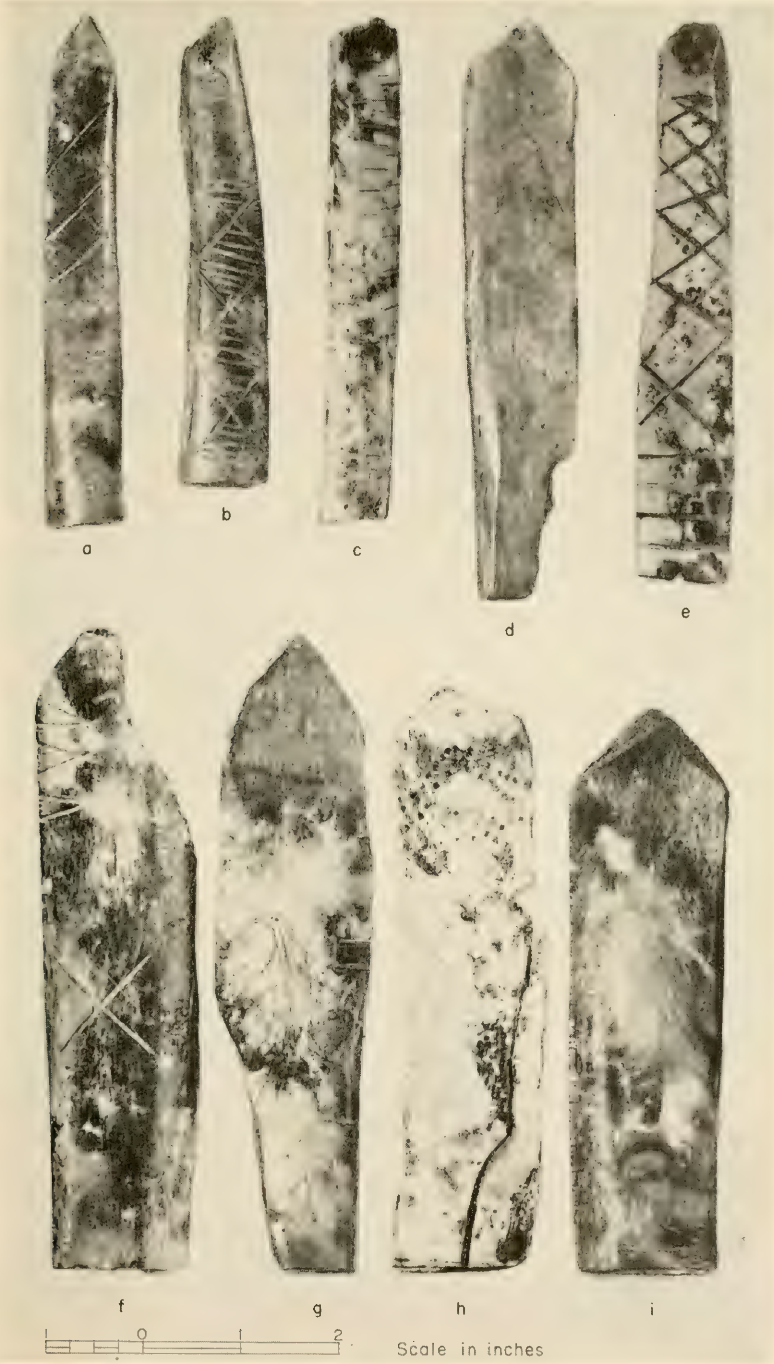


a, Site of Lower Brulé Indian Agency. *b*, Trench showing remains of north stockade wall, Whetstone Indian Agency and Army Post.





a, Excavation at Fort Lower Brulé. *b*, Barrel and forge remains at Fort Lower Brulé.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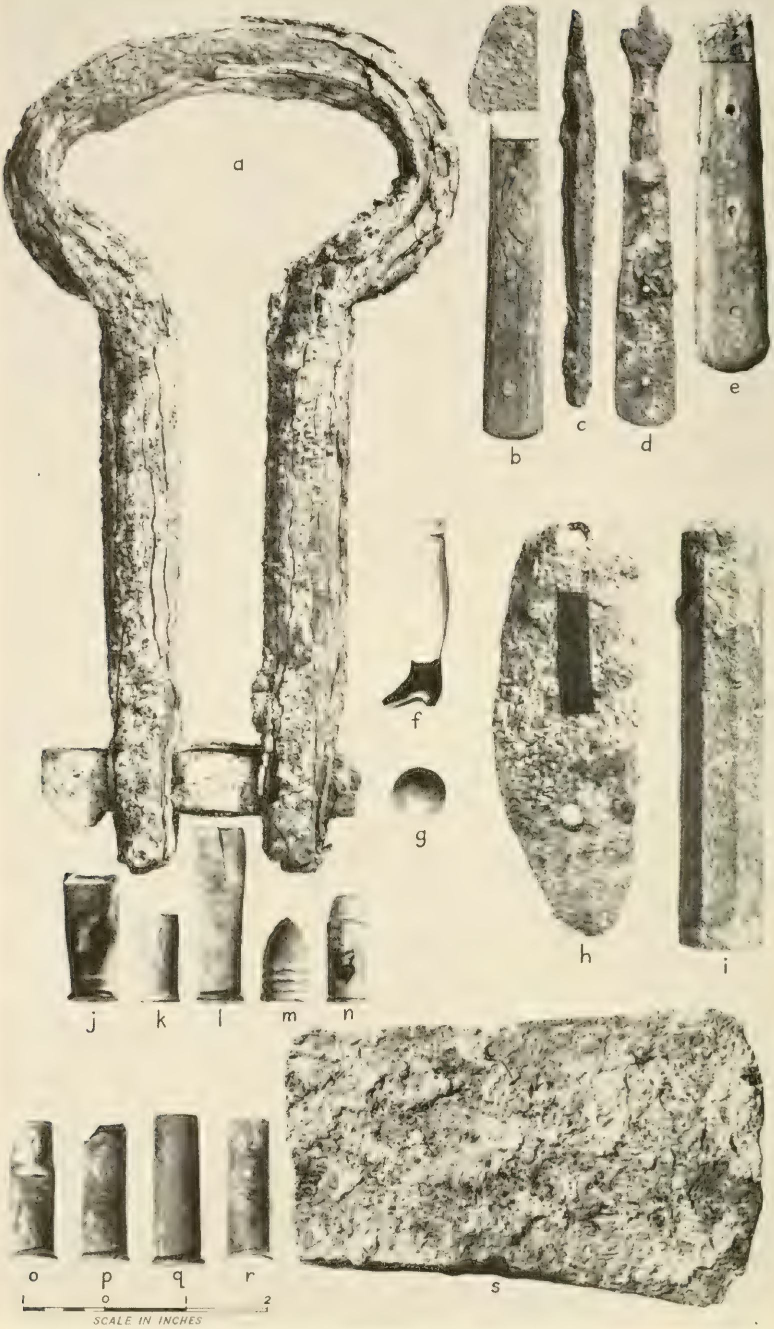
Ice gliders from well at Fort Lower Brulé.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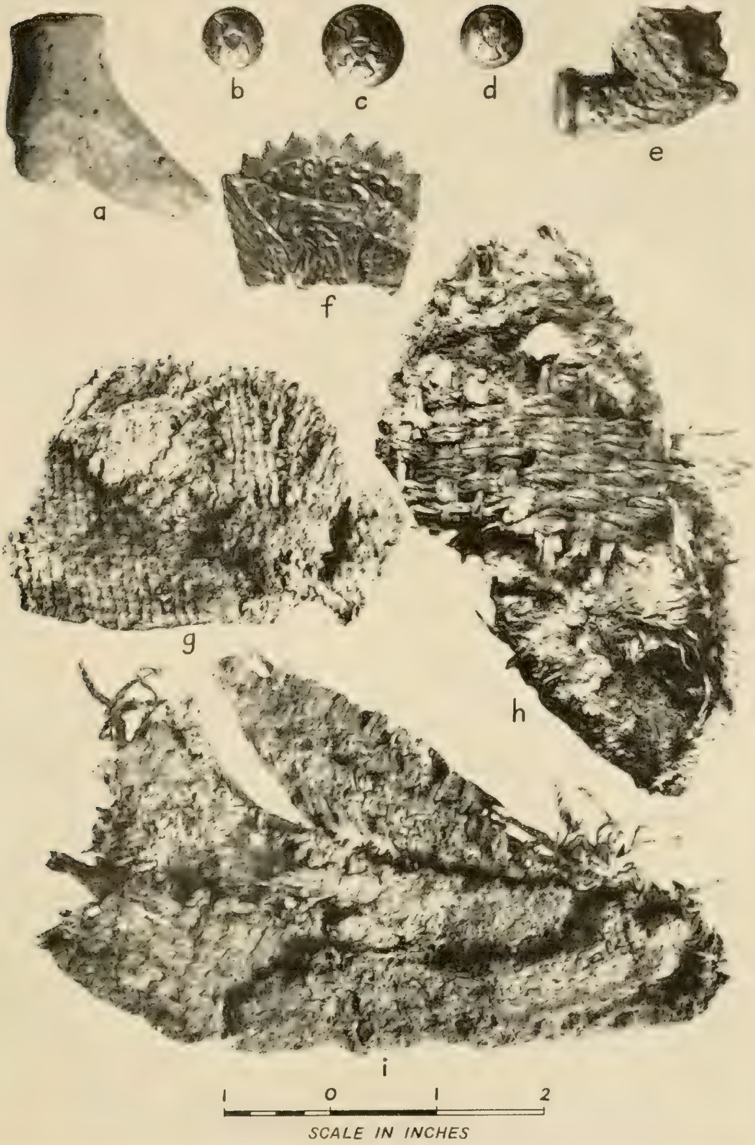
Artifacts from historic sites, Fort Randall Reservoir.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Artifacts from historic sites, Fort Randall Reservoir.

SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 176

River Basin Surveys Papers, No. 17

The Excavation and Investigation of Fort Lookout Trading Post II (39LM57) in the Fort Randall Reservoir, South Dakota

By CARL F. MILLER

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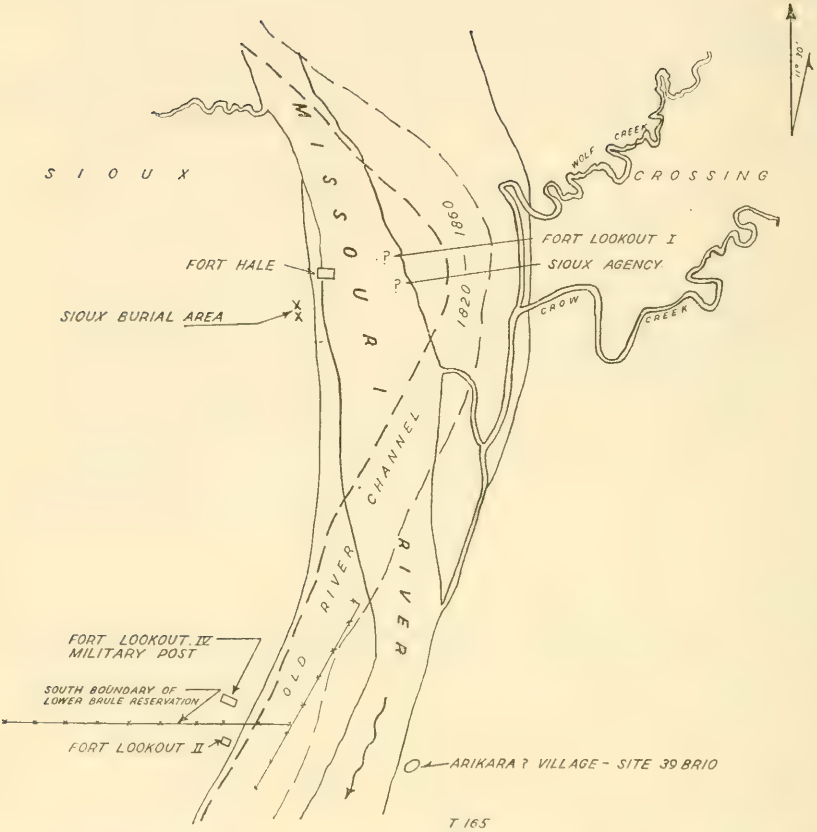
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SIOUX BURIAL AREA
CROW CREEK
OLD RIVER CHANNEL
FORT LOOKOUT IV MILITARY POST
SOUTH BOUNDARY OF LOWER BRULE RESERVATION
FORT LOOKOUT II
ARIKARA ? VILLAGE - SITE 39BR10
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Map 2.—Portion of the Missouri River showing the location of Fort Lookout II Trading Post and nearby historical sites.

THE EXCAVATION AND INVESTIGATION OF FORT LOOKOUT TRADING POST II (SITE 39LM57) IN THE FORT RANDALL RESERVOIR, SOUTH DAKOTA[1]

By Carl F. Miller

INTRODUCTION

The purpose of this paper is to report on the archeology of the multiple components of Site 39LM57 in South Dakota, for which Mr. Mattes has provided the historical background in River Basin Surveys Paper No. 15. Starting in the uppermost level were the remains of Fort Lookout II, probably established in 1831 by the French Fur Trading Co. and subsequently occupied, 1840–51, by the trader La Barge. Below them were traces of two prehistoric aboriginal horizons. The excavations were carried on in accordance with an agreement between the River Basin Surveys of the Smithsonian Institution and the National Park Service whereby sites determined by the Service historians to be of historical significance to the Inter-Agency Salvage Program would be investigated by Smithsonian archeologists.

The writer wishes to acknowledge, first of all, the patience and forbearance of Dr. Frank H. H. Roberts, Jr., director of the River Basin Surveys, while this paper was being written. Appreciation is extended to Merrill J. Mattes and Roy Mattison, historians of the Region Two office of the National Park Service at Omaha, Nebr., for the use of their documentary references and for their suggestions and advice while in the field. Special thanks are given to the Honorable M. Q. Sharp, of Kennebec, S. Dak., former Governor of the State, for his permission to excavate the site which was located upon his property. Acknowledgments are also made to K. Anton Kolthoff of the Fort Thompson Agency who made Indian labor available; to Dr. John L. Champe, of the Department of Anthropology, University of Nebraska, for his interest in the site and his helpful suggestions; to Edward Schumacher for the many fine line drawings used to illustrate this paper; to Ruth W. Miller, my wife, for her help in the field and sufferance while this paper was in preparation; and to many others who at one time or another rendered assistance during the course of the work.

---

[1] Submitted December 1953.

SITE 39LM57

During September 1950 an attempt was made to establish archeologically the actual locations of Fort Lookout Trading Post (Fort Lookout II) and Fort Kiowa (Fort Lookout I), since the two were thought to be either very close together or possibly to occupy one and the same site. Site 39LM57 was found by an archeological survey party of the Missouri Basin Project of the River Basin Surveys, led by Thomas R. Garth, in approximately the place where it was postulated, from documentary evidence, a post should have been situated. Two areas of occupation were apparent, and as they were several hundred feet apart it is questionable whether both should have been included under the same site number. One was much larger than the other and there is little doubt but that it was the location of the military post, Fort Lookout IV, of 1856. The smaller area is the one with which this report is chiefly concerned. The site, located 10 miles north of Oacoma, S. Dak., and 300 yards south of the Lower Brulé Indian Reservation line, was on the secondary terrace of Fort Hale Bottoms three-quarters of a mile west of the Missouri River in Lyman County. There the flats were covered with typical prairie grasses, and trees were growing in the flood plain and beds of the tributary streams between the flats and the river's edge. Except for the fact that the river had shifted its course some distance eastward, the general appearance of the setting probably was quite similar to that when the post was occupied. To determine whether the smaller area was the real location of the old trading post and/or the old fort, some digging was done by Garth at that time, but the results were not wholly satisfactory (Garth, MS.). It was later decided to carry on additional work the following season and, as Garth was no longer a member of the staff, the writer was placed in charge of the investigations. Digging was started in the latter part of July 1951, and continued until the middle of September when the student help returned to school.

During the first season a rough north-south rectangular area, lying parallel to the edge of the flat, about 70 feet long and 15 feet wide, was excavated. Materials found there led to the conclusion that it was the location of a several-roomed structure that had burned. No data were obtained as to its size and shape, however. At the start of the second season that area was carefully cleaned, ranging in depth from 0.3 to 0.5 foot, and it was found that the coordinate stakes of the year before were still intact. Since the marking had been obliterated it was necessary to redesignate each stake. The method previously used was not known, but it was hoped that it would be possible to tie in our results with those of the year before. Starting on the floor of the earlier excavation, layers 0.1 foot thick were removed. Numerous bits of burned clay bearing the imprints of twigs and branches were found mixed with the soil, which also contained some charcoal and ash lenses. Pieces of fragmentary chalkstone were scattered over most of the southern limits of the excavated area (fig. 3).

At a depth of 0.3 foot we uncovered a number of charred beams. The clay briquettes increased in quantity and the amount of ash became deeper and more concentrated. The briquettes, ash, and charred beams roughly outlined a rectangular area approximately 70 feet long and 20 feet wide oriented north-northwest and south-southeast. We could not determine the overall dimensions of the structure nor could we tell whether there had been one large or several small rooms. A major portion of the structure apparently had a dirt floor. A number of hearth areas, Features 13, 39, 40, and 41 (fig. 4) would indicate that it was extensively used as a place to build fires. This would exclude the possibility of any plank flooring, at least over most of the area at the time when the building was last occupied. There were some indications, however, of a certain amount of wooden flooring in one part of the area and it is possible that a small room at the south end of the structure was so equipped. Mr. Garth suggested at the end of the first season's work that Indians may have removed the flooring after the building was abandoned and used it for firewood, a not uncommon practice. They also may have camped in the remains of the structure from time to time, building the fires evidenced by the hearth areas, and have been directly responsible for its ultimate burning.

Midway across the southern end of this area was a rectangular block of Niobrara chalkstone, Feature 17, 3 feet long, 1 foot 6 inches wide, and 4 inches thick. The top 1½ inches of the block was a pale salmon-pink color while the rest was a murky white. The discoloration was such as would be caused by prolonged fires. This block of chalkstone probably served as a footing for a fireplace which occupied

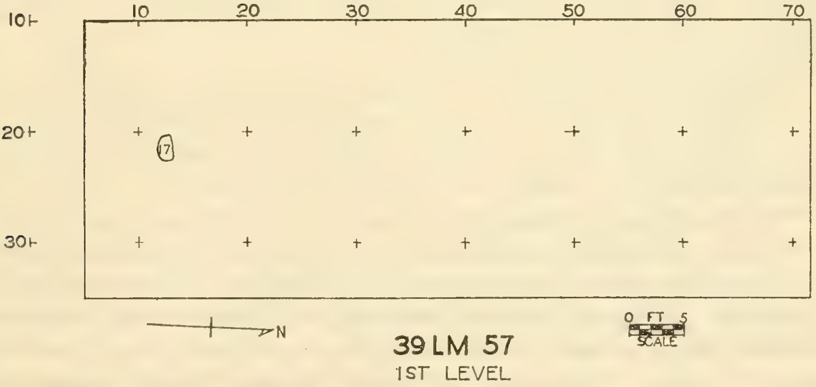

FIGURE 3.—Diagrammatic representation of area uncovered in previous summer's work at the site, with the location of the chalkstone fireplace footer, Feature 17, in position.

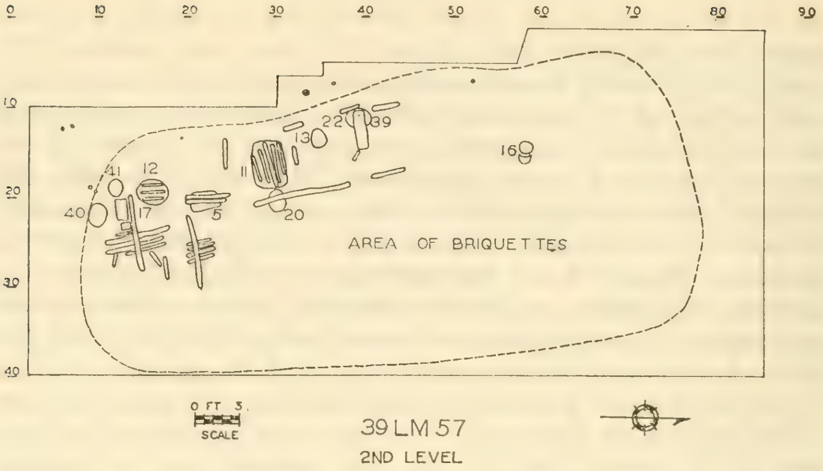

FIGURE 4.—Representation of the tangible remains of La Barge Trading Post with its associated features and position of charred beams on floor of the structure.

that part of the building. The scattered pieces of chalkstone suggest they may have been used in the construction of the fireplace, while the burned clay daubing indicates a stick-mud chimney such as was in vogue at that time in frontier outposts.

In the vicinity of the fireplace footing were sections of charred beams ranging in length from 1 to 4 feet, in width from 5 to 6 inches, and in thickness from 1¼ to 2½ inches. Small pieces of flooring planks that were intact measured 6 to 10 inches in width, from 1¼ to 2 inches in thickness, and from 1 to 2 feet in length. All were so badly fire checked, however, that it was impossible to determine whether they were sawed or hewn. Charred wood was not found over the entire 70- × 20-foot area and it may be that the building had partially tumbled down prior to the fire, with the result that the northern portions were more readily consumed than the southern. Hence the greater concentration of ash and the paucity of charcoal in the northern end of the area (fig. 4).

Scattered over the floor of the structure were various-sized glass trade beads, a few square-cut nails, metal objects, and pieces of white-clay trade pipes. In the vicinity of the chimney footing percussion caps of the type manufactured after 1820 were found.

Two interesting features, Nos. 5 and 11 (fig. 4), were rectangular pits with vertical walls and flat bottoms suggesting storage bins or perhaps wine cellars such as found in houses at Jamestown Island, Virginia. The latter, however, were lined with brick, while the South Dakota examples were unlined. No remains of bottles were found in them, however. In the ash-filled soil in Feature 5 (pl. 12, *a*) were the charred remains of a wooden stirring paddle associated with a flat disk-shaped stone, fragments of charred boards, a few square-cut nails, and the ubiquitous glass trade beads. The top and the upper portions of the vertical walls were fire stained, while the lower portions lacked the discoloration. The pit probably was partially filled with debris before the structure burned. It measured 3.8 feet in length, 2.3 feet in width, and was 0.5 foot in depth. For a "wine cellar" it would have been rather shallow, but it is possible some of the upper portions were removed in the earlier excavations before the feature was recognized. Feature 11 was somewhat more regular in outline and deeper. The pit was 5.5 feet long, 4.0 feet wide, and 0.8 foot deep. In the top layer of the fill were pieces of charred beams lying parallel to each other and to the long axis of the pit. Beneath them in the well-mixed ash-laden debris was an abundance of glass trade beads, none of which had suffered from the action of the fire. There were some greenish-colored beads which retained their shape until touched or disturbed, when they immediately crumbled into powder. Apparently there was something in the soil which affected them.

Adjoining firepits, Features 16a and 16b, were found near the northern limits of the structural area. Both had consisted of a shallow, excavated basin with an encircling rim of mud plaster. Feature 16a showed considerable use in that the pit was filled with a whitish ash. A portion of it was subsequently destroyed when the later firepit, 16b, was placed alongside it. The second pit was almost filled with ash and bits of charcoal, showing that it too had functioned for some time. The upper portions of both pits contained the usual deposits: ash-filled soil, bits of charcoal, glass trade beads, and a few square-cut nails. In 16a was a single brass earring of the type used for pierced ears.

The last features found on this level were three circular basin-shaped midden pits, Nos. 12, 20, and 22, ranging from 2.5 to 4.0 feet in diameter. They probably were not cache pits since their depths, 0.3 to 0.5 foot, were so shallow. Rather, they appeared to have been dug primarily for the disposal of refuse. The material in them consisted of ash-filled soil, scraps of buffalo bones, square-cut nails, and a few glass trade beads. There were a few scattered post molds throughout the area, but they formed no definite pattern and could not be correlated with any of the other features. Their purpose is problematical.

After this level was thoroughly investigated, the area was lowered another 0.2 foot and a number of shallow hemispherical trenches filled with ash, small particles of clay briquettes, and darkened soil were encountered. Some of them formed a definite pattern, as shown on the plan for the third level (fig. 5), while others started and ended abruptly without appearing to follow any particular plan. The eastern limits of the trenches were well defined, but the western and northern ends could not be traced since they petered out in both directions. There is little question that they indicate some form of structure.

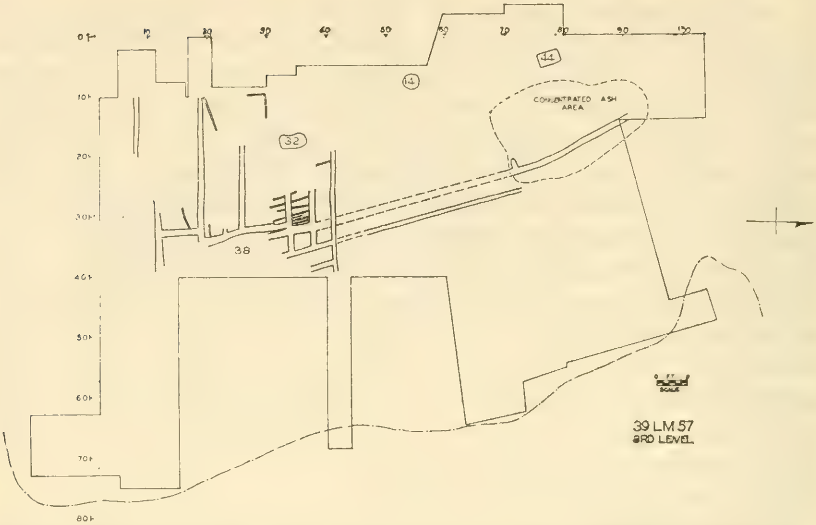

FIGURE 5.—Representation of third level of occupation, which shows the arrangement of the narrow trenches of the earlier Fort Lookout and the various pits and ash concentration.

They possibly were the molds left by stringers, partially embedded in the soil, to support a floor. There was considerable evidence of a fire at this level also, and such timbers, thoroughly consumed, could well account for the ash-filled molds. Because of the suitability of the site a second building was placed there following the destruction of the first. How long an interval may have elapsed between the fire and the new construction is not known, but there was nothing in the deposits to suggest that it was an appreciable one. Removal of debris from the fire and leveling of the site to prepare it for the new building could easily have been responsible for the disturbance of some of the trenches and the obliteration of the ends of others. It also could have destroyed evidence for a period of nonoccupation. Several years' accumulation of wind-blown materials probably would produce only a thin layer of sterile deposit.

Inside the trench-filled area was another of the rectangular pits with vertical walls and flat base, Feature 44, illustrated in plate 14, *b*, and figure 5. This pit was similar to those found earlier in the dig with the exception that it was more carefully built and of greater depth. Throughout the fill of this pit were the ever-present glass trade beads of various sizes and colors and square-cut nails. Again, we do not know the true function of such pits, for they may have served either as cache pits or wine cellars.

Two small shallow pits, Features 14 and 32, were uncovered at this level. They also contained glass beads and in one there was a single square-cut nail. Both were filled with ash-laden soil.

These two levels constituted the remains of the post temporarily occupied by the trader La Barge, and the preceding French Fur Trading Co.'s Fort Lookout II. They were not, as originally thought, the site of Fort Lookout I and the earlier Fort Kiowa.

Although the level of Fort Lookout gave little architectural data, enough remained to indicate that a rectangular log structure had been built upon the spot, allowed to fall partially into ruins, and later was burned. The debris was subsequently leveled to make way for the establishment of another trading post which was built directly upon the same spot. The two log buildings almost coincided in orientation, but the later one was alined slightly more to the north-northwest–south-southeast. The only truly diagnostic artifacts recovered from this portion of the site were the few copper percussion caps of a variety that possibly dates from 1822 to 1850, which correlated with the reported dates of the trading post's existence. Beneath the two historic horizons were two levels pertaining to aboriginal occupation. Since they unquestionably antedated the periods when the whites were in the area, they will not be discussed in the present paper but will be described in a separate report pertaining to the Indian cultures.

SPECIMENS

Among the artifacts recovered are objects both of European and Indian manufacture. A number of the European objects were found upon the surface. They could have been dropped or deposited there by soldiers from the subsequent, nearby, Fort Lookout Military Post, by settlers of a much later date, or by the Indian occupants of the Lower Brulé Indian Reservation. This, coupled with the fact that large herds of cattle grazed over the site, speeded the mixing of the later deposits. The artifacts found within the site display varying degrees of preservation and are certainly of 19th-century origin. During the excavations all artifacts, whether complete or fragmentary, were saved, also all samples of wood and the larger pieces of charcoal which might be useful in either establishing a tree-ring chronology for that section of South Dakota and the Missouri River drainage or in making carbon-14 tests.

The European objects throw some light upon the life of the period, but since the site was subjected to scavenging by the Indians and the soldiers, many of the more noticeable objects may have been carried away, leaving only those which lay beneath the sod. Trading posts were not primarily intended as "centers of culture," but they did serve somewhat in that capacity for the whites in the area. The houses were good indicators of the age. They were mostly crude log cabins with earthen floors. Windows were either few and very small or totally absent. Doors were crude plank affairs hung on heavy hinges. The roofs were low and flat and were covered with earth and sod. All in all, they probably were dark and dingy but served exceedingly well the purpose for which they were built. Under such conditions luxury items were no doubt scarce and evidence for them is largely wanting. Most of the articles obtained represent commonplace objects which were used about the post or were for trade purposes. By 1830 trade items had become more or less stabilized in character and are not as sensitive indicators of the source of origin or period involved as formerly. However, they still have some significance.

Evidences of food which remained in the fill of the fire basins and numerous pits were the charred fragments of rabbit, bird, and an occasional fishbone, also charred beans, corn, and pits of wild plum and chokecherries. Noted for their absence were the remains of buffalo bones. Whether the occupants traded for Indian-made pemmican or just carried large pieces of buffalo meat back to the post for immediate consumption is a question archeology cannot answer.

HISTORIC ARTIFACTS

At the beginning of operations in 1950, Mr. Garth went over the entire surface of the site, carefully picking up all artifacts which were present. They included objects of iron, particles of glassware, fragments of chinaware, stone artifacts, slivers of bone, a few Indian potsherds, and the remains of an old leather shoe sole. Whether this assemblage of artifacts can be assigned to periods of occupation represented by buried material is questionable. In the series, such objects as axheads, iron-kettle fragments, butter-churn particles, etc., are not of sufficiently distinctive character to be differentiated from similar objects in use at the present time. A few of the items may be old, but most of these artifacts probably were never in the possession of the occupants of the two levels uncovered. Only the artifacts that were found in actual association with the two levels will be considered from the standpoint of historical significance.

TRADE BEADS

Various types of glass trade beads were scattered on the floor, inside various pits beneath the floor, or in the fill above the floor of the upper historic levels. Some workers contend that beads are variable enough in form and style to be identifiable according to period and also reflect their place of manufacture, but those found here do not help in that respect. None was ornate, such as the multicolored "Hudson Bay bead," sometimes called the "star bead," and most complex forms consist only of faceted or simple bicolored types.

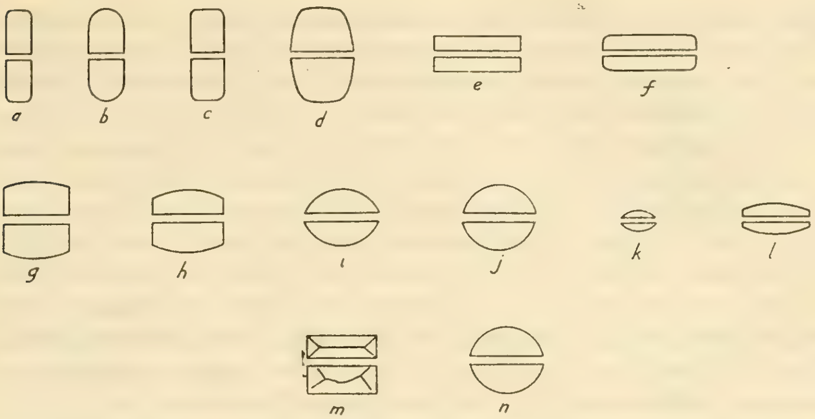

Figure 6.—Bead types according to shapes, showing cross sections of each.

Six hundred and fifty-nine beads of the various types make up the collection. For study purposes they were first separated into groups depending upon color alone. It was found that there were 49 green, 422 white, 128 blue, 11 red, 19 pink, 22 black, and 8 with a white core and a red outer coat. Next, they were separated according to shape within each color group and it was found that 14 different shapes were present (fig. 6). Sizing came next, and out of the total there were 225 of the "seed" form, those that did not exceed 2 mm. in diameter. Most of the colors present in the larger types were displayed by the seed beads with the exception of the black.

All seed beads were either type *a* or *b* (fig. 6) with the exception of a single specimen that was made from a square glass cane, the corners of which were slightly ground off, leaving rounded rectangular surfaces on the sides (fig. 7).

One interesting group, represented by 14 specimens, were the faceted beads. They ranged in height from 2.5 mm. to 10.0 mm. with corresponding diameters. Most of them were cut from a hexagonal cane and the facets appear to have been made by rubbing each small section against some abrasive object, thus creating a number of irregular facets over either the entire surface or a part of the surface. Two spheroid faceted beads are in the lot. They are crude and show the same irregularities in shaping that are displayed by the cylindrical specimens.

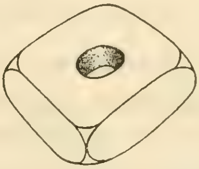

Figure 7.—Unusual square-cut glass trade bead.

The central perforations vary from 2 mm. to 3.5 mm. A number of these beads display some iridescence, especially the blue and black varieties, which may have resulted from lying in contact with potash derived from the wood ashes in the site.

In the white variety there is a wide range both in shape and size, while the color itself was not standardized and shows a range from a dead white through a mild greenish hue that shades off into a very light gray. According to the accompanying chart (fig. 6) all the white beads conform to types *a* to *i* and *l* with the greatest stress being placed on those from *a* through *e*. Types *a* through *f* were originally parts of slender glass tubes or canes which were segmented into individual beads and then fire treated to round and smooth off the rough edges resulting from the cutting of the tubes.

Glass beads were assigned definite trade values by the trader or fur company dealing with a particular group or tribe. This "value" fluctuated from locality to locality and from trader to trader. The Hudson's Bay Company, for instance, established a standard value which was "one made beaver" or the equivalent of 50 cents. The term "made beaver" was applied to a skin that had been processed ready for shipment to a tannery through the trader. When an Indian wanted to purchase a certain article in the trader's store he was told how many made beaver skins it would cost him. Two beads known to manufacturers as "Cornaline d'Aleppo" and to the traders of the North as "Hudson's Bay beads" had an exchange value of six beads for one made beaver. A transparent green bead and one of opaque yellow glass were of the same value. A light-blue bead had a value of three for a skin, and three other varieties two for a skin. A large bead of pale-blue opaque glass was the most expensive in the group, as a trader exacted two skins for it. The smaller beads known as seed beads were sold in "bunches" of five or six strings, each 4 to 6 inches long, according to the size and kind of beads, and having a weight of four or five bunches to the pound. The value of one bunch of seed beads at Fort McPherson was said to be one beaver. The value of beads outside of the fur trade of the North was not so definitely established (Orchard, 1929, pp. 88–89).

One thing certain is that all these types were in use during the period between 1820 and 1850, and that some of them are still being sold either on Indian reservations or in nearby towns where Indians make and sell beadwork to tourists and various shops.

TRADE PIPES

A fair collection of clay-pipe fragments was recovered from the floor of the upper historic level and in the fill above the floor. Forty-eight stem fragments and nine fragmentary bowls, some with portions of the stems still intact, constitute the study series. Not a single whole pipe was found.

All pipes conform to a uniform pattern in style in that beneath the base of the bowl there appeared a short blunt spur too sharp for the pipe to rest upright upon (pl. 15). In most cases the spur was impressed with the initials "W" on one side and "D" on the other (pl. 15, *b*, *c*, *f*,). If the pipe was held normally in the mouth the "W" always appeared on the left side with the "D" on the right side. The letters lie along the same parallel plane and axis as the stem, with the tops pointing forward.

A double concentric circle was impressed on a single specimen in about the same position as the "W" and "D" on other pipes. The spur on this pipe forms a sharper angle with the juncture of the stem and bowl than the first variety (fig. 8). The bowl was impressed with a decoration of leaves and stems in half round that completely covered the exterior (pl. 15, *e*).

A third variety has an unmarked spur on the same configuration as the concentric circle variety but the bowls are plain with the exception of the initials "T–D," roman-type letters 5 mm. in height, which were impressed on the side of the bowl facing the smoker (pl. 15, *d*; fig. 8). No one has been able thus far to identify the manufacturer of this variety. All bowls are of a size and shape characteristic of the late 18th or early 19th century.

On two specimens it was noted that one had the spur worn down considerably on the left side, while on the other it was worn down on the right side. It was thought that this wear might indicate something of the smoking habits of the individual smoker showing that he was either right- or left-handed. When various pipe smokers were asked as to their habits in putting down their pipes after smoking, it appeared that this was not a valid deduction since some right-handed

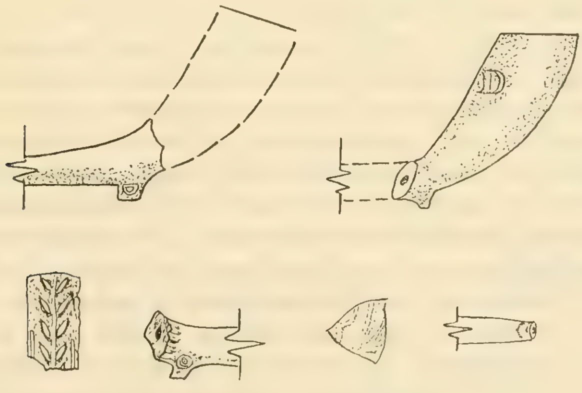

Figure 8.—Certain details of construction of various pipes.

individuals turned them one way and some another. Plate 15, *f*, shows the partial erosion of the spur on the "D" side of the pipe, or right side.

Plate 15, *h*, illustrates a small-bowl fragment of a reddish clay pipe that had the exterior bowl surface treated with an orange glaze. The bowl was fluted and all indications point to white manufacture, but whether it was a local product or an imported one is not known. No other fragments of this or other similar pipes were recovered.

CHINA AND EARTHENWARES

Only an occasional piece of earthenware was found on the floor level of the upper historic level. Material of this nature was not recovered from the lower historic level. Most of the pieces were sherds that did not have any identifying marks. Fortunately, a few had enough diagnostic decorative motifs to make possible identification of the ware.

Two kinds of 19th-century Staffordshire wares, the "molded shell" rim of the variety manufactured during 1815 to 1820 and a molded "woods" design manufactured during the 1815 to 1840 period, were found. Two interesting sherds of the "shell" rim type were found in the fill above the floor of the uppermost historic level. They had been shaped into rough disks and rubbed down by historic Indians who probably intended to use them as gaming pieces.

The fragmentary lid of a Chinese porcelain ginger jar came from this same level. Basically, its color is of a milk-white hue with slightly darker blue bands of color forming the decoration on the sides and top. Presumably this was not the usual type of ware traded with the Indians of this period but formed part of the possessions of the trader or persons living there. No age can be assigned to this fragment.

A single fragment of tortoise-shell ware was picked up from the surface of the site. It has been identified by C. Malcolm Watkins, curator of the Division of Cultural History of the United States National Museum, as Rockingham ware of the variety manufactured in Bennington, Vt., in 1849. According to the records, this ware was first manufactured in England and later spread to America, where it was made principally in New England. This sherd probably represents a later deposit upon the site after the trading post was abandoned. It could have reached the La Barge post at about the end of its occupancy, but it is not likely a dish less than 2 years old had reached South Dakota at that time. It seems more reasonable to conclude that it came from the adjacent military post of 1856.

Sherds of stoneware vessels were more common than the better class of chinaware or porcelain. Parts of jam jars, crocks, and bottles are represented in the collection. Fragments of vessels which were glazed with a salt glaze on a stoneware base were also found.

GLASS

Of the 50 fragments of glass recovered either from the surface or from the fill above the uppermost historic level, only a few could be attributed to the actual occupants of this level. All fragments came either from shattered bottles or windowpanes. Two types of window glass are represented. One is an early 19th-century variety which measures 1 mm. in thickness and is colorless. It occurred only in very small pieces within the contact zone. Three fragments of it came from the floor of the uppermost historic level. The other type is a much thicker glass—3 mm.—of a greenish hue, which was found on the surface. The latter fragments are much larger and there are many more of them. This type was first used during the latter part of the 19th century and is still being manufactured.

The early chroniclers indicated that windows and doors were rather costly items which whenever an outpost was abandoned were removed and taken to the next station or post. This may account for the paucity of thin window glass within the site itself. If any windows were abandoned, it is certain that many more fragments of this type of window glass would have turned up within the deposits from the two historic levels at the time of excavation.

Shoulder fragments from two small vials were found on the floor of the first historic level, but it has been impossible to determine the actual size or shape of the vials from these fragments. The glass is very thin, 0.5 mm., and colorless, and the surfaces are covered with a thin film of oxidized material which shines with a kind of iridescence.

Wine bottles, of an olive-green color, are represented in a very fragmentary state. Some pieces show deterioration while others exhibit no change in composition and appear as fresh as when new. A single small, thin fragment of a cobalt-blue bottle was found on the floor of the first historic level. It had undergone a limited amount of oxidization. Whether these changes in composition are attributable to soil acids in conjunction with wood ashes is not known, but a certain chemical action has taken place that has altered the original surfaces. No glass fragments showed secondary fusing which could have been caused by heat from the burning of the buildings.

Two ornate light-green glass fragments came from the surface of the site. One bears a series of curvilinear interlocking scrolls adjacent to the base of the container, while the other has a number of undulating parallel ridges running at right angle to the base, (fig. 9). Both pieces were molded and the color and composition are identical to that of the thicker window glass.

A complete two-sectional molded bottle, 131 mm. high and 49 mm. in body diameter, was picked up from the surface of the site (pl. 16).

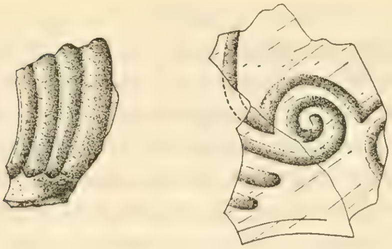

FIGURE 9.—Surface contour of molded glass vessels.

A marked amount of oxidation is present on both inside and outside surfaces. In certain types of glass such a condition can be brought about rather quickly by the action of direct sunlight and rain when an object lies in direct contact with soil acids. The presence of this change does not necessarily denote an age equal to that of either of the historic levels, and it is probable that the specimen is relatively recent.

BUTTONS

Various types of buttons were found. They occurred mainly on the floor area of the uppermost historic level, although an occasional one was in the fill above the floor. Materials used in their manufacture ranged from brass, bone, china, iron, and shell to some kind of base metal, probably pewter. Most of the buttons are of such a nature that very little information has been published about them. A number of "china" buttons of the type that were formerly used on men's and boys' shirts and girls' and women's shirtwaists and underwear are in the collection. They were molded in a biconvex shape with a slight depression in one face. They have four holes for the thread used for attaching them to garments. These buttons measure 11 mm. in diameter and from 2.5 to 4.0 mm. in thickness, (fig. 10, *a*). All are of a milk-white porcelain or glass, are very glossy, and are plain on both surfaces. Such buttons are not datable since similar ones can be purchased in local stores at the present time.

Two types of "mother-of-pearl" buttons were found. The earlier form consists of a perforated disk through which a centrally placed shank was attached. The lower end of the shank was pierced by a single hole through which the thread was passed to attach the button

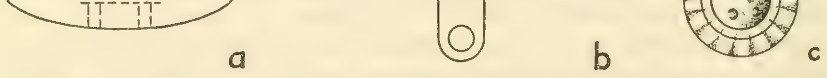

FIGURE 10.—*a*, Cross section of milk-white glass button showing well and holes for attachment. *b*, Pearl-and-brass button showing cross section. *c*, Details of surface treatment.

to the garment. On the upper surface of the button the top of the shank, 2 mm. in diameter, is centrally placed in the shell disk. Below the shell disk the shank was enlarged to 4 mm. in diameter. It extends beyond the base of the button for an equal length. By this method the pearl shell disk was firmly affixed to the brass shank so that there is very little chance of the two coming apart except through breakage or the application of force. A button of this type is illustrated in figure 10, *b*.

The later type of "pearl" buttons are small disks, 9 mm. in diameter and 0.5 mm. in thickness, ornamented with a number of slight serrations on the outer edge of the disk on the upper surface. These serrations enclose two plain concentric furrows which in turn surround the slight central well in which occur the four small perforations for the thread. Buttons of this type were more costly and were used almost wholly on ladies' dresses and shirtwaists, never on undergarments where they did not show. Mrs. Ford (1943, p. 151) tells us that: "They were expensive buttons when new, and if you inquire the price of fine pearly buttons in any store today, you will find that even plain ones are not cheap now." These buttons are very white with a pleasing iridescence.

Bone buttons are represented by four specimens. Buttons of this material have alway been cheap and were usually made from waste or scrap bone. All specimens measure 17 mm. in diameter and are pierced with either 4 or 5 holes. Two of these buttons are perfectly plain and unadorned, while the other two have a slight raised circle surrounding the perforations and the edges have been somewhat rounded.

Iron buttons were rare. Only a single specimen, which resembles the china buttons in a general sort of way in shape and size, was found. Instead of the central well containing four perforations there are only two. This specimen is badly rusted and nothing can be said about the surface finish or what design may have appeared on its upper side. As a rule such buttons have a design molded or stamped on the upper faces.

Several sizes of brass buttons are in the collection. They range in diameter from 12 to 18 to 24 mm. The 12-mm. size was pressed into shape from a sheet of brass 0.5 mm. in thickness, the central well being formed at the same time. Later four holes were drilled to provide the means of attachment. The face of each is plain, but on the back are two concentric circles of slight depressions stamped into the metal itself. Since they do not show on the upper surface and can not be considered as a type of decoration, these circles must either have had some function in the fashioning of the button or have had a part in holding on a covering material.

In the 18-mm.-diameter buttons there are two very different shapes, a disk and a spheroid. The disk variety consists of two different grades. Both are of the same diameter and thickness, 1.0 mm., and on both a wire loop was brazed on the base for attachment. The better grade was made of a finer quality of brass and the disk, after being punched from the stock plate, had its edges slightly rounded and smoothed. Whether the disk was cupped ever so slightly at the time of punching or later on when the words "Warranted" and "H. Orange" were stamped on the reverse side cannot be determined (fig. 11, *a*). A very shallow circle separates the words from the outer

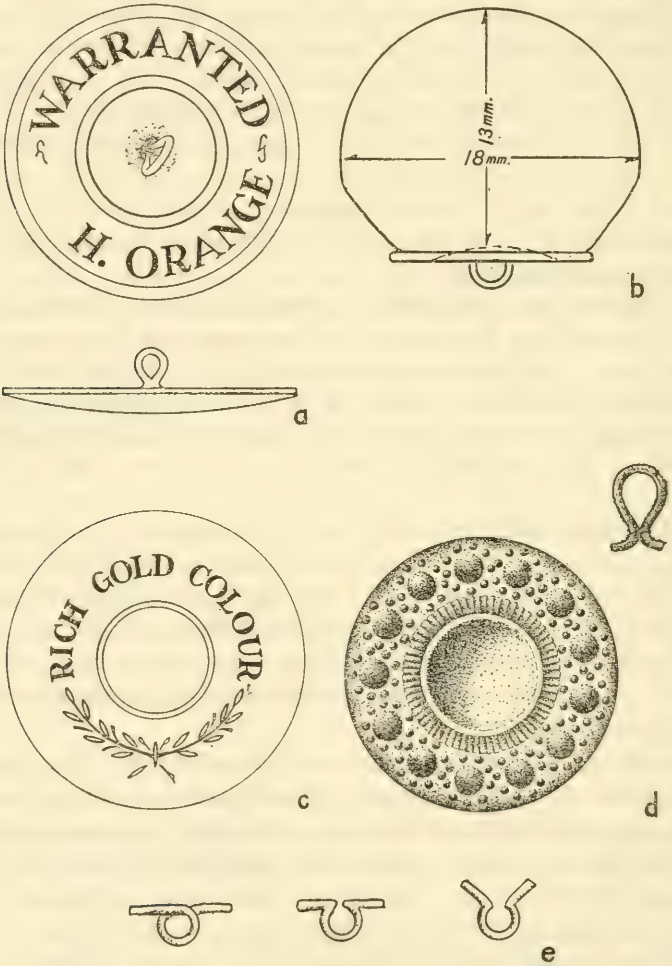

FIGURE 11.—*a*, Back and profile view of brass button bearing inscription, "Warranted H. Orange." *b*, Spheroid button of brass showing measurements and indentation of brass plate. *c*, Showing fine quality of brass button with the inscription on base. *d*, An unusually fine specimen of "French" brass button with its highly ornamented top. *e*, Types of wire shanks used with brass-button construction.

rim of the button, while two other shallow circles are between the words and the wire shank.

The poorer grade, in contrast to the better, is perfectly flat. The edges were smoothed but the face was not as carefully polished. On the reverse face there are no stamped words, but there are two rather shallow concentric circles immediately around the wire loop shank.

The spheroid type of this diameter was made in two pieces, a spheroid and a base plate. The spheroid's greatest diameter is 18 mm. while its height is 13 mm. At the base there was an opening 11 mm. in diameter which was closed by the base plate, the latter slightly beyond the exterior limits of the spheroid. The base plate measures 13 mm. in diameter and is slightly saucer shaped. A wire loop for attachment was brazed in the central concavity. One complete specimen and another lacking its base plate were found (fig. 11, *b*). Buttons of this type were either highly polished so that the brass shone or were covered with cloth which matched or were in contrast to the garment on which they were placed.

The 24-mm. button is a flat disk 2 mm. in thickness which resembles the smaller "Warranted" type but instead the words "RICH GOLD COLOUR" (fig. 11, *c*) appear on the reverse in conjunction with crossed branches of laurel. Two concentric circles surround the brazed-wire loop shank. The top surface was carefully smoothed and probably at one time had a gilt surfacing or wash because slight traces of such a treatment can be seen under a hand lens. In that connection it is said that:

> Most of the early brass buttons were gold plated. The process of dipping brass buttons in a solution of gold and mercury, a discovery of about 1700, made this much easier, and other improvements were also made until it was said that in 1818 the Birmingham manufacturers had succeeded in gilding a gross of buttons with three pennies worth of gold "and" the account adds, "experiments of gilding buttons without any gold have been tried."
>
> The popularity of the gilt button lasted from 1760 to 1840 when electrogilding, discovered in 1840, so cheapened the quality that all demand for them ceased. Electrogilding was not so durable as the older methods of plating and tarnished more easily, and there is no wonder these buttons lost their appeal—they were an altogether inferior product. [Ford, 1943.]

A small button with a top of brass and a base plate of iron measures 13 mm. in diameter and 2 mm. in thickness. The top is embossed with a series of small knobs surrounded by a number of smaller nodes. These combinations appear adjacent to the outer rim of the button while the central portion is formed by a slight ridge surrounding a central saucer-shaped depression. The repousse design was stamped onto a thin brass plate which in turn was crimped over and around a circular iron base plate which was perforated. A false loop of brass wire was inserted in the perforation. This button is illustrated in figure 11, *d*.

Mrs. Ford (ibid.) states that brass buttons were manufactured well before 1700 and were considered old by that time. The first type of brass button was cast in one piece having a conical or wedge-shaped protuberance on the back which was drilled to provide a means of attachment. At a later date a wire loop was brazed to the back of a flat disk or blank. This joint was rather insecure and the loop frequently broke away from the disk. To overcome this defect the wire was bent into either a true loop or a false loop and then brazed into position on the button (fig. 11, *e*).

> The shanking of a button was one of the most important operations in button-making, and separate companies were established simply for the making of shanks. The button manufacturers bought them ready to apply. This continued to be so until about 1860.
>
> Of the wire loop shanks the earliest were hand-drawn wire, which was not perfectly round and was finer than that used at a later date. This shank was apt also to be oval rather than circular. The applying of shanks individually with a blow pipe and "flux" continued until about 1850, and was considered to be one of the most important and specialized operations in the entire making of the button.
>
> The rolling of brass brought a great advance in button-making. This process was first tried in the United States in Waterbury in 1790—somewhat earlier abroad. Now buttons could be stamped from sheets, or strips of metal, and quantity production was easier. [Ford, ibid.]

> "Red metal" and "Prince's metal" are two varieties, the former being used in the button trade. Birmingham, England, originally famous for its iron work, acquired a reputation for brass buttons. Gold lace had long been conspicuous for ornamenting riding-dresses, and, as it grew old-fashioned, its place was taken by brass buttons. The eighteenth and the first part of the nineteenth centuries may be called "the brass button era." [Moore, 1933.]

Two pewter buttons were found in the fill above the floor of the uppermost historic level. These are rather interesting in that one of them shows a certain degree of deterioration while the other is as bright and lustrous as new. They are 17 mm. in diameter and 2 mm. in thickness. There are four perforations in each which are not truly round but slighty elliptical in outline. The buttons were made in a mold to which a shank was attached. Mold marks do not show on the face of the button but are readily seen around the rim and on the back. Before the button could be put into use the shank had to be clipped off close to the back. Since the back was not smoothed over afterward a scar is to be seen in the place of the shank.

Pewter buttons have been used a long time. Generally buttons of this type were used by the lower classes or were sent to frontier posts as articles of trade. There are various types of pewter, depending upon the kinds and amount of metals used. In England the proportions of metals were rigidly regulated and enforced and this same control was put into force among pewter button manufacturers in this country. Some of the early pewter buttons were marked "Hard White" or "Imitation Steel" to indicate quality, but this did not necessarily denote their hardness, for even the hardest pewter was a soft metal which was cheap and easy to melt and cast. Buttons of this material have been cast at home from discarded pewter vessels which were no longer serviceable as such. A number of homes had their own button molds in which they made their buttons. These molds were lent around to other families so that professional button manufacturers did not wholly control the markets.

At one time during the late 16th and early 17th centuries, buttons were willed to members of the deceased's family. Such items were fully described as to use and material from which they were made.

PINS

Two brass straight or ordinary domestic pins were found. One was on the floor of the uppermost historic level while the other was in the earth fill of a pit beneath the floor of that level. Both are covered with verdigris along with tiny particles of soil adhering to the surface. One is complete and its overall length is 31 mm.; 1.5 mm. of this is taken up by the head which tapers away from the shaft and is topped with a slightly curved cap. Pins of this type were molded all in one piece. The other pin has lost its head and the remaining shaft measures 29.5 mm. in length. Both pins measure 1 mm. in diameter.

> During the Middle Ages the ordinary domestic pin, which has long been an article of feminine economy, was made of brass. In the fifteenth century it had become of so much importance as an article of commerce in England that in 1483 the importation of pins was forbidden by statute. Only the best pins were made of brass, for there were inferior ones made of iron wire blanched, and it was against these that the enactment was directed. By 1636 the Pinmakers of London formed a corporation, and the manufacture was subsequently removed to Bristol and Birmingham, the latter town becoming the principal centre for the industry. Brass works or foundries had been started in Bristol in 1702, and by a man named Turner, in Birmingham, about 1740.
>
> The earliest settlers in America were dependent on London for their pins and needles, and there are few lists sent over by them which did not include an order for one or the other of these articles. They were not sold as now, by the paper, but by the hundred.
>
> So necessary were pins that is was not long before the colonists appreciated the benefit to accrue to them by their manufacture, and the people of the Carolinas were stimulated by the offers of prizes for the first-made pins and needles. This was by 1775. At a later day than this several pin-making machines were invented in the United States, and during the war of 1812 the price of pins rose to such an extent that the manufacture was actually started, but it was not particularly successful until 1836. By 1824, however, Mr. Lemuel Wright, of Massachusetts, had patented a pin-making machine in England, which established the industry on its present basis. [Moore, 1933, pp. 121–123.]

Pins at one time were rather expensive and were handmade. Shafts were made separate from the heads. Heads were attached by winding loops of very thin wire around the butt end of the pin shaft and slightly tapping them to tighten and to shape them into a knob. Pins were passed down in wills during early Colonial times and listed as articles in dowries. The examples found at Fort Lookout II do not belong in that category, however, as they appear to be relatively recent.

ARTICLES OF BRASS, COPPER, AND LEAD

A number of brass cartridge cases, together with numerous lead rifle balls and shot, were recovered both from the surface of the site and from the fill above the floor of the uppermost historic level. Mendel L. Peterson, head curator of the Department of Armed Forces History, U.S. National Museum, identified the various cartridge cases.

One is a Henry Flat, of 44 caliber, manufactured by F. Tyler Henry during the mid-19th century. The base of the case is marked with the capital "H" and bears two bars, one on either side of a beveled rim that represents the points of pressure that were brought about to detonate the cartridge (fig. 12, *d*). The case measures 11.5 mm. in barrel diameter, 13 mm. in diameter at the base, and is 24 mm. high. At the time the cartridge was found it had been inserted into the cylinder of a larger cartridge case which bears the following marks upon its base: "W.R.A. Co." and "45–75 W.C.F." (pl. 17, *b*).

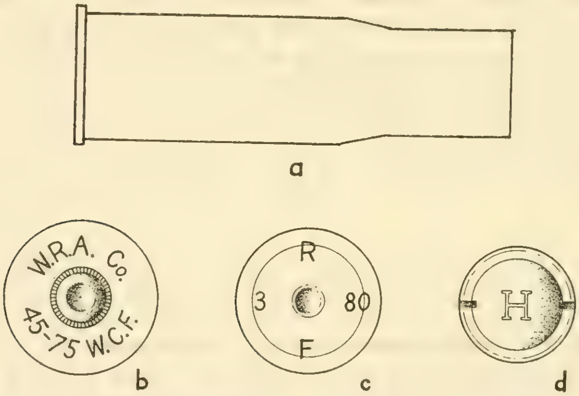

FIGURE 12.—*a*, Cartridge case of Winchester-type shell from upper historic level. *b*, *c*, *d*, Basal configurations of three cartridge cases.

This cartridge has been identified as belonging to a 45–75 Winchester rifle, Model 1886, single shot firing a shell of 350 grains. This case measures 48 mm. in its overall length and for 29 mm. of that length has a diameter of 14 mm. The case then gradually tapers inward for 5 mm. until it again forms a true cylinder for 14 mm. and measures 12 mm. in diameter. The base itself measures 16 mm. in diameter (fig. 12, *a*). These two cartridge cases formed some sort of a carrying compartment either for needles or pins. Whether it served as part of some trapper's outfit or belonged to some of the local Indians is not known.

The third cartridge case bears the following marks on the base: at 12:00 noon there is the letter "R"; at 3:00 o'clock there is the figure "3." This indicates that the cartridge was issued in March 1880 from the Frankford Arsenal. It is a central primer, a type known as the Benet Primer–.50 caliber. The cartridge case is 54 mm. long, 13.5 mm. in diameter, and the base measures 16 mm. in diameter. This cartridge case is illustrated in plate 17, *a*, and in figure 12, *c*.

Most of the cartridges (surface finds) were of the types used by the United States Army during the late 1860's and early 1870's and may have been used with an Allen alteration rifle (.50–.70 Winchester). Such objects as these could have been discarded by the occupants of the nearby military post, which postdates the trading post.

The copper percussion caps are of a type used with pistol and musket and manufactured after 1820.

Associated with the armament were a number of musket balls (pl. 17, *e*, *f*), a single lead slug (pl. 17, *g*), as well as a number of leaden shot. The musket balls ranged in caliber from 50 to 63–64. The slug was part of a 45-caliber cartridge, while the shot was of the "dropped" type. One musket ball still retained the attached shank which was formed in the mold (pl. 17, *b*), indicating that it had been either lost or discarded for some reason before being completed.

A number of small lead strips were in the upper fill. Apparently they were just nondescript pieces and had been discarded as useless because of their thinness and small size.

Objects of brass and copper were at a premium. A small section of twisted brass wire, a number of brass rings for pierced ears, as well as the brass buttons previously described, were found on the floor of the uppermost historic level.

The brass earrings consisted of a fine brass-wire ring to be inserted through a pierced ear lobe. On the shank of the wire ring was a small brass ball, 3 mm. in diameter, from which was suspended a cone-shaped spangle 8 mm. long. The open-based cone with slightly flaring lower edge was suspended by its apex from the solid brass ball. Objects of this nature were rather highly prized by both the Indians and whites.

IRON

Hardware makes up most of the iron remains: nails, staples, axheads, hinges, and other objects, some of which are recognizable while others are so fragmentary as to make identification virtually impossible.

Nails and spike shafts, usually square in cross section, range in length from 2.5 cm. to 15.0 cm. Apparently there was no standardization as to length since there is variation within groups. Heads of both handmade and machine-cut nails are not constant in shape. Roughly the machine-cut nails are more nearly rectangular in outline with either square or slightly rounded corners. The handmade variety tend to have more of a roundish head with the tops either pyramidal or truncated-pyramidal in outline.

A number of short nails, 4.8 cm. long, whose shafts are roughly circular, bordering on square, in cross section, have a large mushroom-shaped head. They are definitely of the handmade variety. They were used in places where there was danger of the common variety pulling through the wood. Such large heads preclude this possibility. One has the shaft brought down to a very nice tip, but the majority are of the blunt-tipped variety.

In addition to the nails are a number of U-shaped staples which were fairly large and were used with various hasps (pl. 18, *c*, *d*). One of the larger examples measures 94 mm. in length and shows that it definitely was hammered into shape, while a shorter specimen, 70 mm. in length, is more regular in outline. There are no hammer marks on the shafts and the tips have been drawn to even points. This suggests a machine-made article. The latter was found rather high in the fill above the trading post, while the handmade staple came from the level belonging to Fort Lookout II.

Assigning dates to either nails or staples is not a practice to be commended, but in this case it is known that most of these objects were in use between 1800 and 1850. Nails and staples have been made and used over a long period of time and some nails are still being handmade in the vicinity of Chamberlain, S. Dak. Square machine-cut nails are sold in various hardware stores under the term "case-hardened" nails.

A single, small brass-headed tack, commonly used in upholstery work, was found within the fill above the floor of the trading post. Unfortunately, such tacks are not diagnostic enough to indicate any particular time period. Similar tacks were used in the 17th century at Jamestown Island, Va., to trace out various decorative patterns on boxes and furniture, yet are procurable at most hardware stores at the present time.

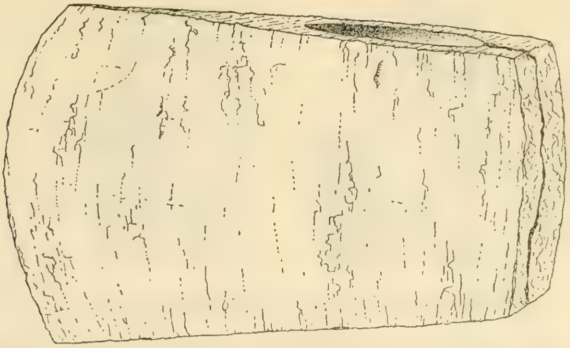

FIGURE 13.—Hand-forged axhead, showing split butt end.

Two axheads that have all the earmarks of being hand-forged were recovered from the surface of the site. One is so badly battered that the butt end has been completely obliterated, leaving only a small portion of the cutting edge intact. This undoubtedly was brought about by using the axhead as a wedge. The pounding on the butt end had mushroomed the metal until less than half of the entire head remains. The other specimen is in much better condition. The butt has been split as though the metal was initally two pieces and was welded to form the haft opening by bringing the two pieces around to form the butt. In doing this the two parts were not successfully welded and a weakness was present which became apparent through usage. This seems to have been a common fault of axes of this type (fig. 13).

A number of hinge fragments were also found on the surface of the site. They can be classified as either butt or strap variety. The strap hinge is definitely of local manufacture. Some blacksmith, possibly with limited experience, formed the loop through which the suspending staple was inserted. The welding was crude and the adjoining surfaces rough. The butt hinge is a machine-made object of a type procurable at the present-day hardware stores (fig. 14) and is much later in time than either the trading post or the fort and must have been deposited after both of those establishments were abandoned.

Pieces of wagon furniture were found on the surface. Included are the reinforcing band of a whippletree and a rectangular band, round in cross section, which was used in the construction of a wagon (pl. 18, *e*, *f*).

Knife fragments were recovered from the floor of the trading post. Only one had an incised bone handle of the table variety (pl. 18, *o*). Another had the fragmentary tag of the blade with the handle shaft intact. All material covering the shaft of the latter had either burned

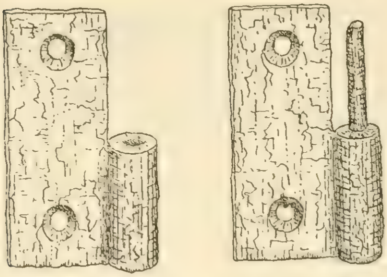

Figure 14.—Machine-made hinge fragments.

or rotted away. This type of knife is typical of the time period of the trading post.

Iron scrap and blacksmith discards were among the miscellaneous iron objects. Short blunt pieces showing chisel marks where they had been cut from larger stock, sectioned bolts, sections of strap bands with or without holes, cast-iron kettle fragments, and an occasional small section of rods make up the collection. One section of a cast-iron object, having the incomplete word ". . . POCASSET . . ." imprinted on the slightly excurvate surface, either came from an old stove or was the lid of an old Dutch oven. None of the iron is very diagnostic of any particular time period.

TRAIT LIST OF THE HISTORIC ASPECT

Community plan activity:
- Settlement on plateau accessible to river and plain alike
- Basin-shaped firepits
- Fire-hearth areas
- Midden pits, frequent
- Cache pits, absent
- Traces of log molds designating structural areas, rectangular in outline
- Niobrara chalkstone fireplace footer

Technological and artistic activity:
- *China and earthenware:*
  - Staffordshire ware of the period 1815–40
  - Rockingham ware of period 1849
  - Brown-glaze earthenware bottles
  - Green-glaze earthenware crocks
  - Brown-glaze earthenware crocks
  - Porcelain ginger jar lid decorated with bands of light blue
  - Porcelain buttons
- *Glass:*
  - Trade beads of various sizes, shapes, and colors
  - Window glass:
    - Colorless—thin
    - Pale green—thick
  - Vials, thin, colorless glass
  - Bottles, olive-green color, assorted with rum or wine bottles
  - Bottles, pale green, mold cast, with decorative raised designs

Technological and artistic activity—Continued

- *Metal:*
  - *Iron:*
    - Nails and tacks
      - Handmade
      - Machine-cut
    - Wagon furniture
    - Cast-iron kettles
    - Axes
    - Hinges
    - Bolts
    - Perforated strap iron
    - Knife blades
    - Blacksmith-shop discards
    - Pot handles
    - Iron rods
    - Hooks
    - Staples
    - Fireplace tong fragments (?)
  - *Lead:*
    - Musket balls
    - "Dropped" shot
    - Slugs
    - Thin sheet fragments
  - *Copper:*
    - Percussion caps
  - *Brass:*
    - Buttons
    - Tack heads
    - Earrings
    - Cartridge cases
    - Wire
    - Pins
  - *Pewter:*
    - Buttons
  - *Shell:*
    - Buttons
  - *Bone:*
    - Buttons
    - Knife handles

INDIAN ARTIFACTS

A catlinite pipe-bowl fragment was found in the fill above the floor of the trading post. It does not indicate that it was ever smoked. The surface of the bore is perfectly clean and shows the "rifling" left by the drill. Whether this fragment was brought up by gopher action, which was noted in parts of the site, from a deeper deposit, or was dropped there later could not be determined, since it was collected during the earlier excavation. It is the only piece of catlinite found in the historic horizon. Whether it formed a part of a tubular, a platform, or an elbow pipe could not be determined. It definitely is of Indian origin and may represent a discarded fragment from a pipe which broke during manufacture.

A number of other Indian stone artifacts, mostly surface finds, came from the historic levels. They include small, thin, triangular projectile points of the late Mississippia type, a number of crudely chipped knives of Bijou quartzite, two amorphous standstone hones, an arrow-shaft straightener, and a number of snub-nosed scrapers. This whole assemblage of artifacts could be attributed to various elements of late Siouan groups who controlled that section of South Dakota.

SUMMARY AND CONCLUSIONS

During 1947 Merrill J. Mattes, of the National Park Service, History Division, made a historical survey of the Fort Randall Reservoir area. Part of this program was an effort to determine the site occupied by Fort Lookout Trading Post and the preceding Fort Kiowa. From the various records he was able to amass data describing, in general, the appearance of the trading post and some definite dimensional information about Fort Kiowa. The trading post was reported to have consisted of a number of buildings surrounded by a stockade. In the course of the survey, Site 39LM57 was tentatively identified as the location of Fort Lookout I and Fort Kiowa and excavations were recommended.

The excavation and study of the site during the summers of 1950 and 1951, as far as the historic aspect is concerned, may be summed up under the following categories: (1) The uncovering of tangible remains of white man's occupancy, with evidence for two trading-post installations; (2) the obtaining of fragmentary details of the structures present; (3) the recovery of the various artifacts of white man's origin; and (4) the results and conclusions derived from this data.

The archeological evidence showed that there had been a rectangular structure, roughly 70 feet long by 20 feet wide, which had been partially destroyed by fire after the building had fallen into ruin. Scattered over the area were numerous rusty nails, either handmade or machine cut, fragmentary and whole trade beads, buttons and other artifacts such as one would expect to find in and around an abandoned structure of this kind. Beneath this level, separated by a thin, sterile layer of coarse sand and loess, was evidence of an earlier white man's structure of approximately the same size and orientation as the later building. It also had suffered from fire, and the area appeared to have been leveled so that another structure could be erected upon the same spot. From the appearance of the overall accumulation of debris, the earlier structure was not occupied any great length of time. The data are insufficient to reconstruct either of the two. There was no evidence that a stockade had surrounded the buildings of either occupation. It appears that the structures were built of logs, possibly cottonwood or willow since these grow profusely in the bottoms, with no brick or stone employed, with the exception of the chalkstone fireplace footer. In each case the roof probably was flat, covered with turf and a coarse gravel, and the gaps between the logs in the walls were chinked with clay. The chimney was a mud-stick affair. In other words, these structures were typically pioneer or frontier in form. If windows were used, they, together with the doors, must have been removed at the time of abandonment because practically no window glass was found and little of the hardware used on doors was present. Whether the few iron staples found had been attached to the doors or to the door jambs could not be determined.

Artifacts belonging to the two trading-post horizons were not numerous. Indians, who may have occupied the abandoned building or buildings for a short time, might have picked up scattered artifacts, and that would account for their scarcity. In actual numbers, glass trade beads were the most plentiful. A number of them resemble some of the Hudson's Bay Company's types. A deep-blue, smoothed round bead, which occurred fairly frequently throughout the site, has been assigned a date of about 1825 in sites in the Northwest. It could have reached South Dakota somewhat later; its presence there fits reasonably well within the known span of occupancy at Site 39LM57. The white beads with their pleasing iridescent sheen resemble "pearls," which may account for their popularity. Iron nails, at this period, were undergoing a technological change with the introduction of the square machine-cut variety. Formerly most nails were handmade and were usually produced at a local forge. Both varieties were found in the trading-post levels. Machine-cut nails came into vogue sometime during the late 1830's and early 1840's and their presence here helps to date the deposits. The remaining types of artifacts are of such a general nature that it is not possible to use them as time indicators.

The excavations at Site 39LM57 have contributed to historical knowledge of this area in South Dakota in that they definitely established the location of an Upper Missouri trading post, namely Fort Lookout II, 1831–40, of the French Fur Trading Co., and the La Barge post of 1840–51. This becomes one of the few early trading post sites so identified. The main artifacts group well within the 1800–1850 period.

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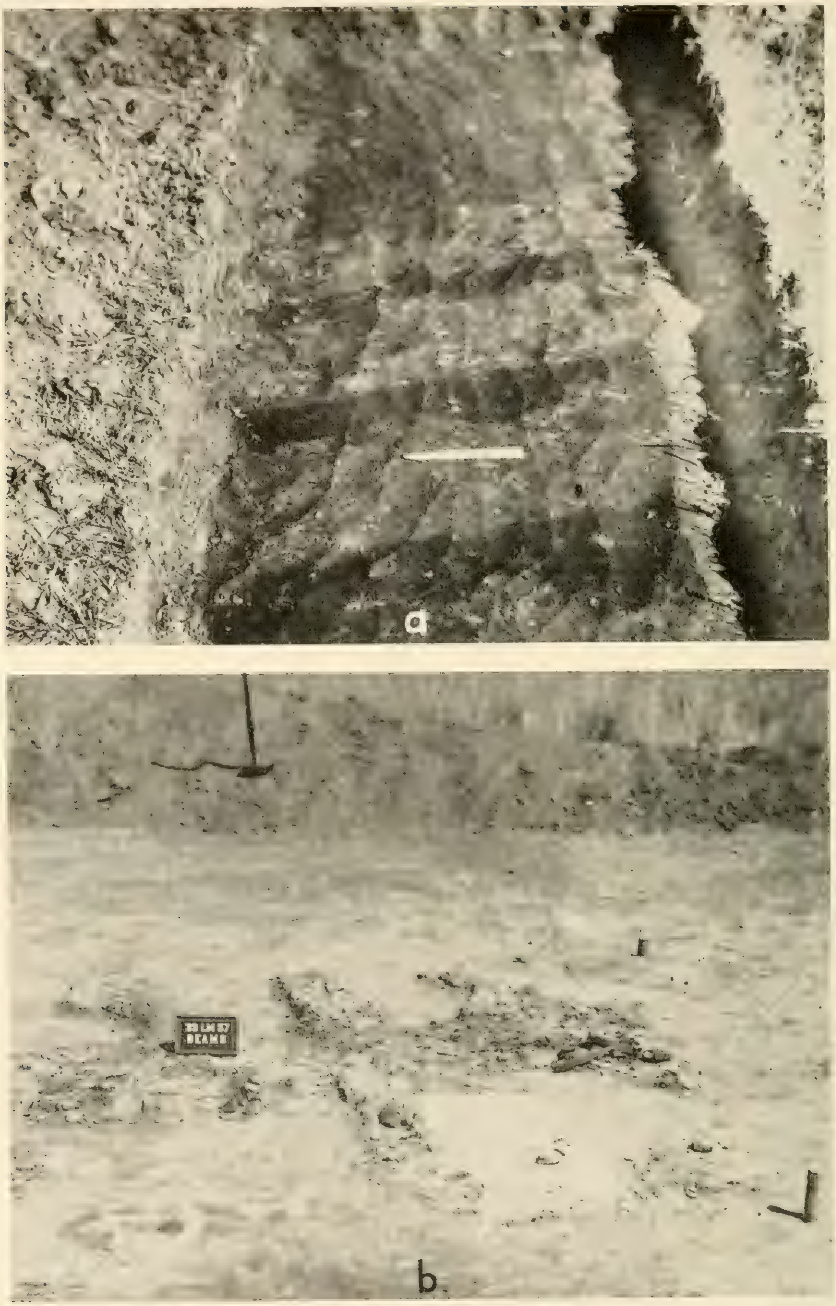
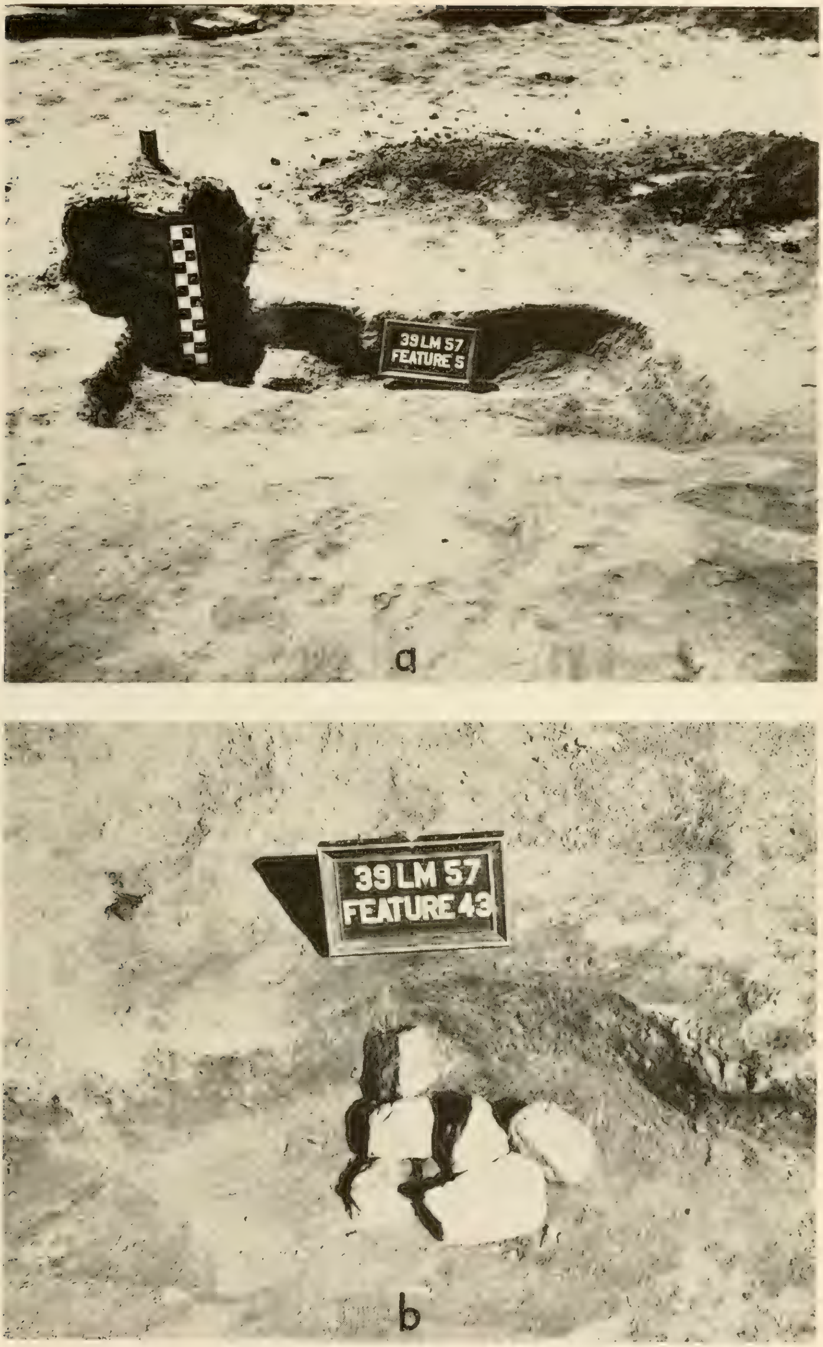
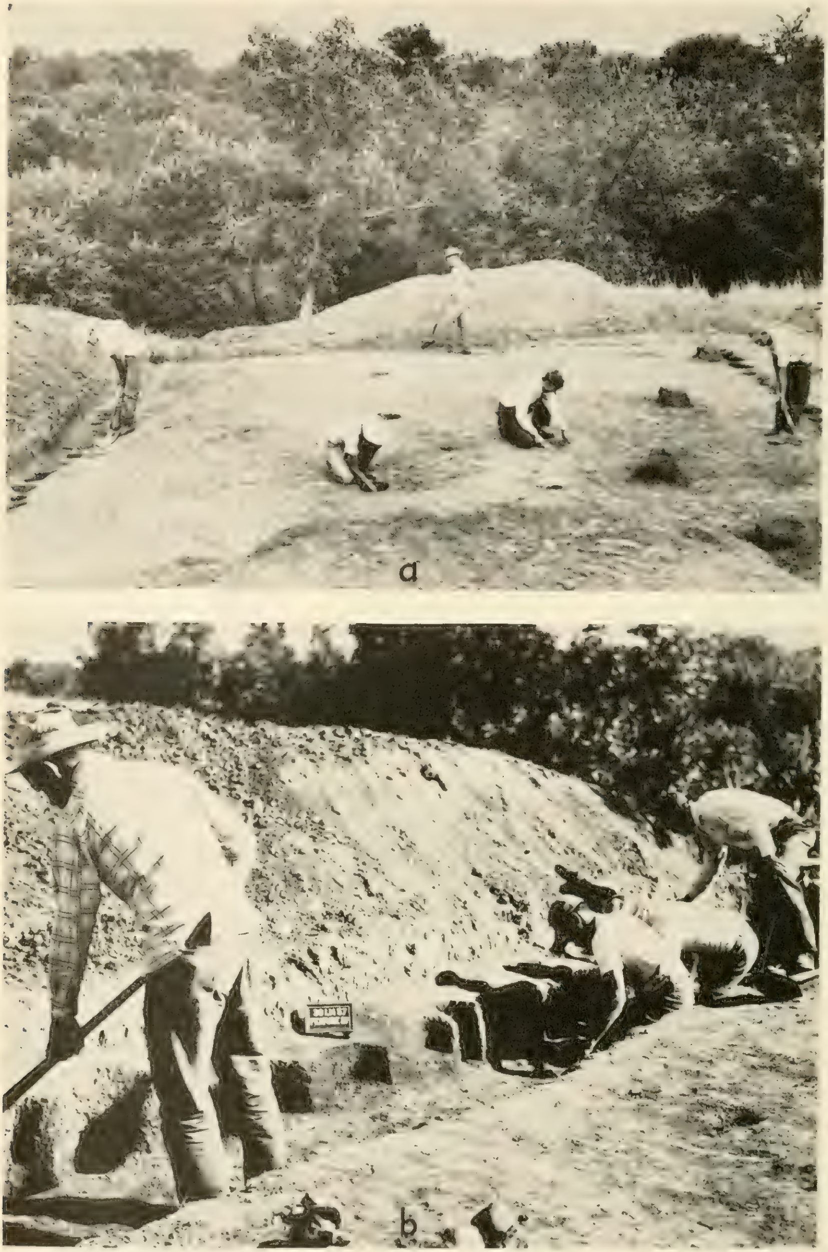
a, At the start of the excavations. Looking northeast across the bottoms adjacent to the west bank of the river. *b*, Erosional ditch which delimited the site along its southern edge and the tree covering of the bottom lands.



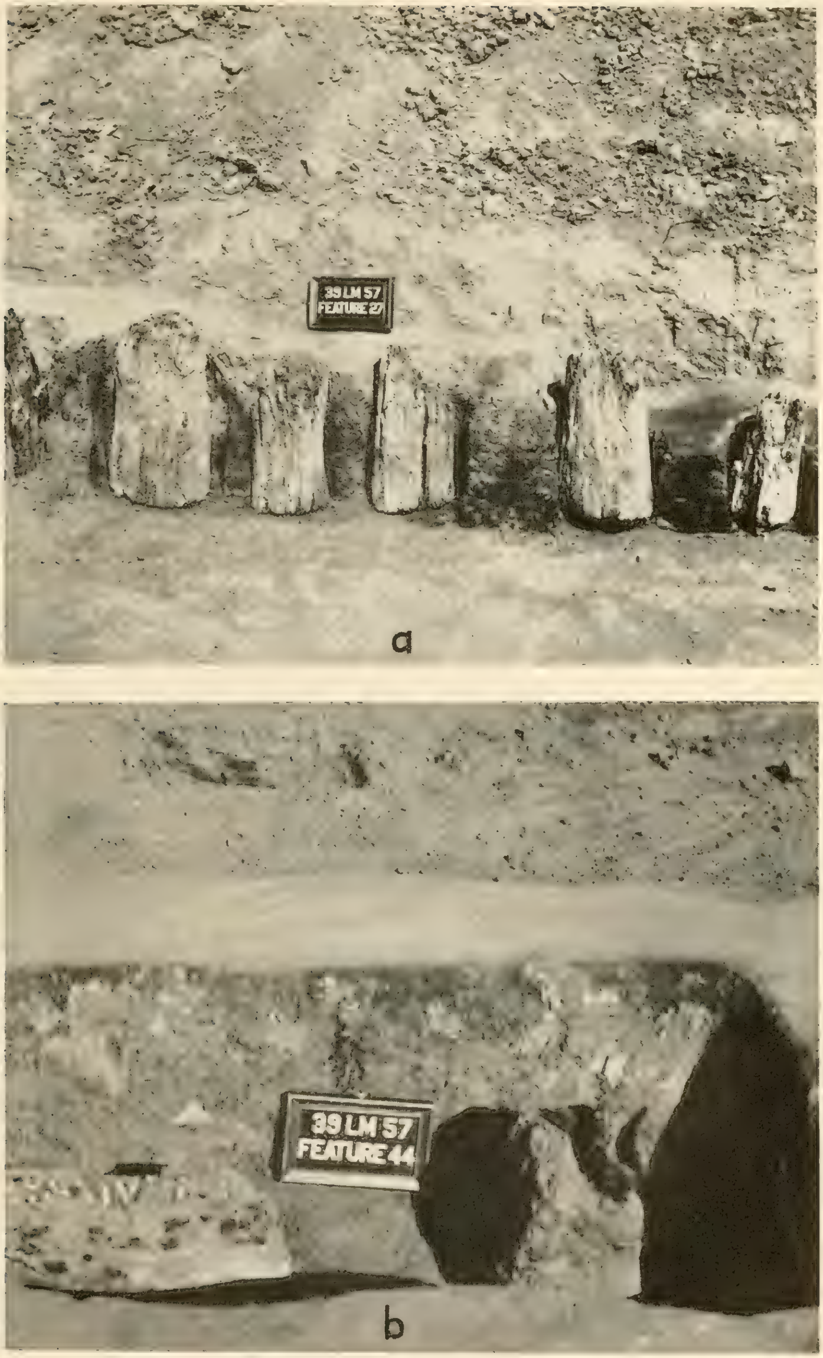
a, The arrangement of the parallel darkened earth-filled shallow trenches which gave the first inkling of the remains of Fort Lookout. *b*, Remains of charred timbers in association with the chalkstone fireplace footer resting upon the floor of Fort Lookout Trading Post.


39 LM 57
FEATURE 5
a
39 LM 57
FEATURE 43
b

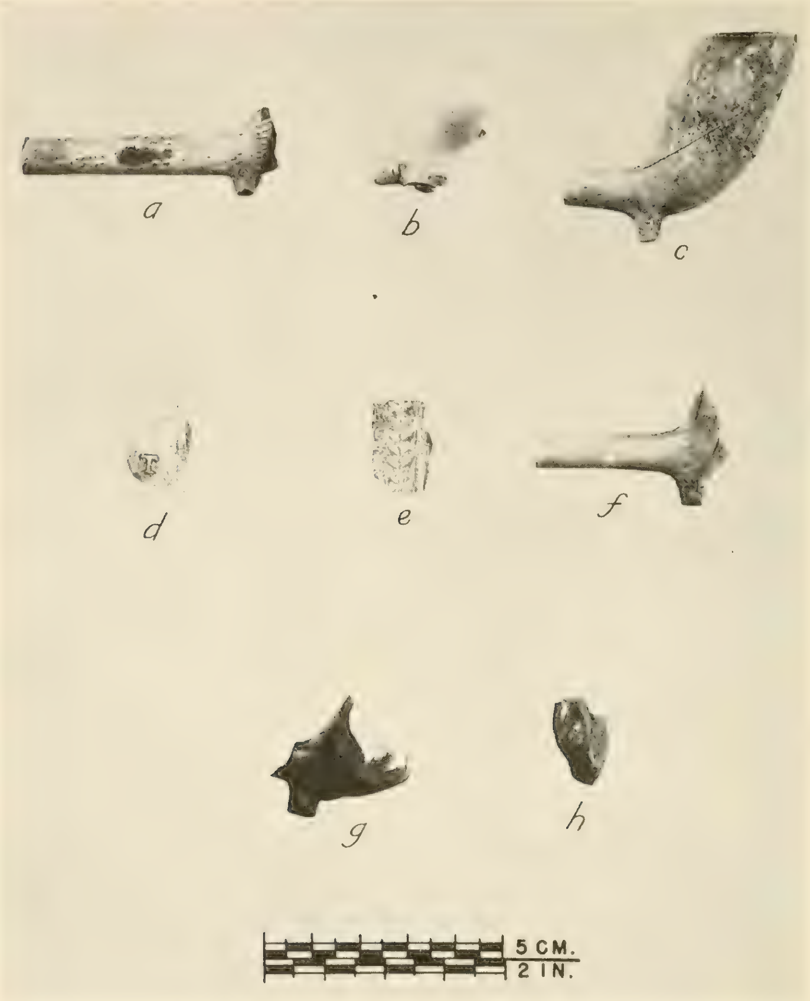
a, View showing depth and outline of rectangular "wine cellar." *b*, A cache of fire-broken stones, Feature 43, resting upon sterile loess. Such caches were not common but were frequent enough to warrant notice.



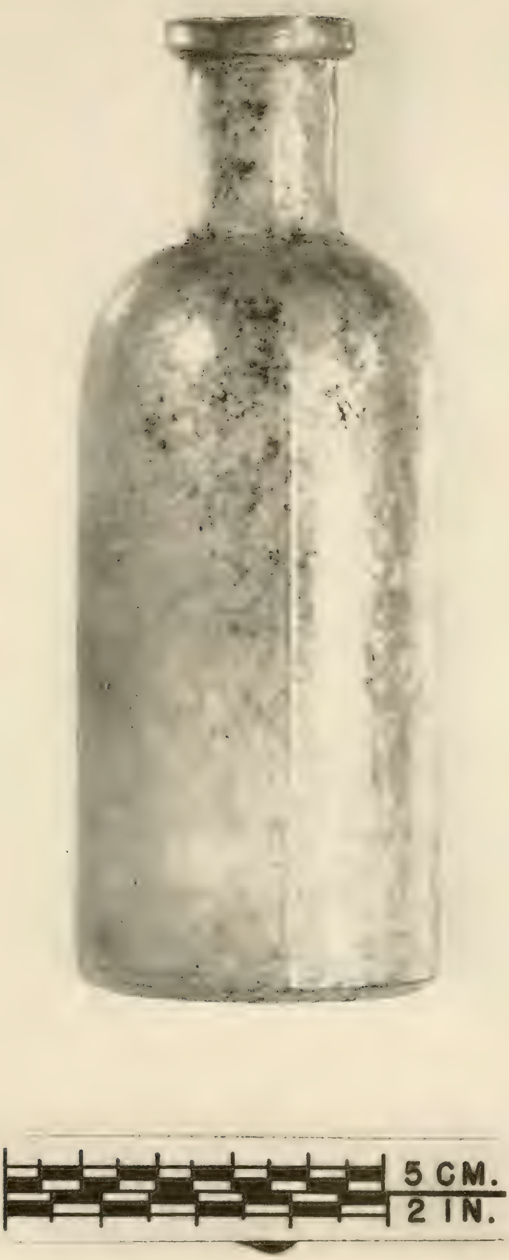
a, Men cleaning off floor of Feature 27, a large rectangular upright post structure belonging to preceding Indian period. *b*, Sectioning post molds to determine original depths.


39 LM 57
FEATURE 27
a
39 LM 57
FEATURE 44
b

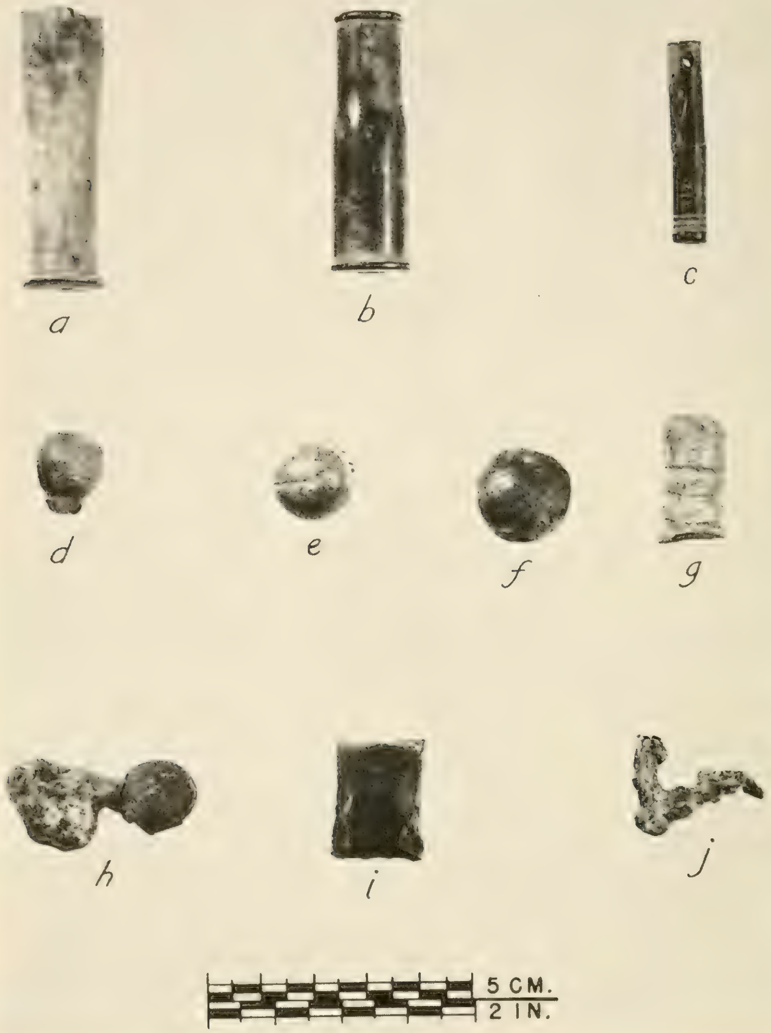
a, Butt ends of original posts in situ in north wall of Feature 27. *b*, Outline and contents of charred wood of Feature 44 with a slight suggestion of plaster used on west wall of pit.


a
b
c
d
e
f
g
h
5 CM.
2 IN.

Fragmentary white clay trade pipes from the Fort Lookout Trading Post horizon.



A two-mold glass bottle from the surface of the site.


a
b
c
d
e
f
g
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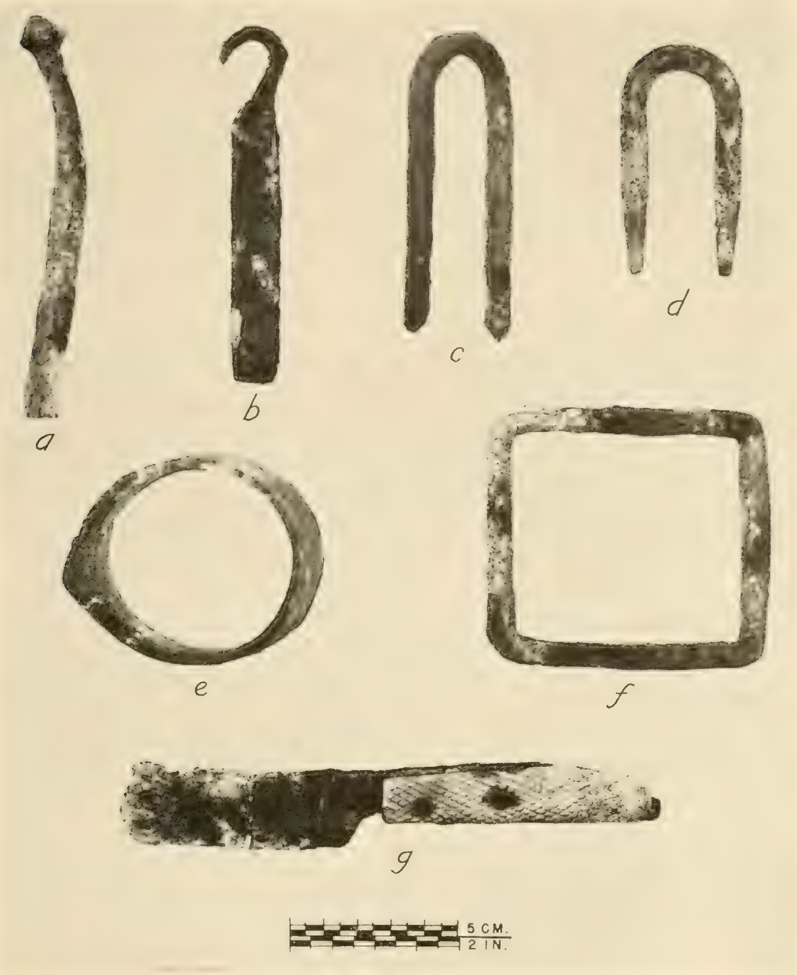
i
j
5 CM.
2 IN.

Brass cartridge cases, musket balls, and slug, as well as an individual gun flint.


a
b
c
d
e
f
g
5 CM.
2 IN.

Various iron objects from the floor or fill above the Fort Lookout Trading Post level.

SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 176

River Basin Surveys Papers, No. 18

Fort Pierre II (39ST217), a Historic Trading Post in the Oahe Dam Area, South Dakota

By G. HUBERT SMITH

502329—60——7

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PLATES

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19. *a*, Site of Fort Pierre II (39ST217) prior to excavation; cellar pit right center; farm buildings rear. *b*, Blading operations; exploratory trenches (right) mark west stockade line.
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29. Trade goods.
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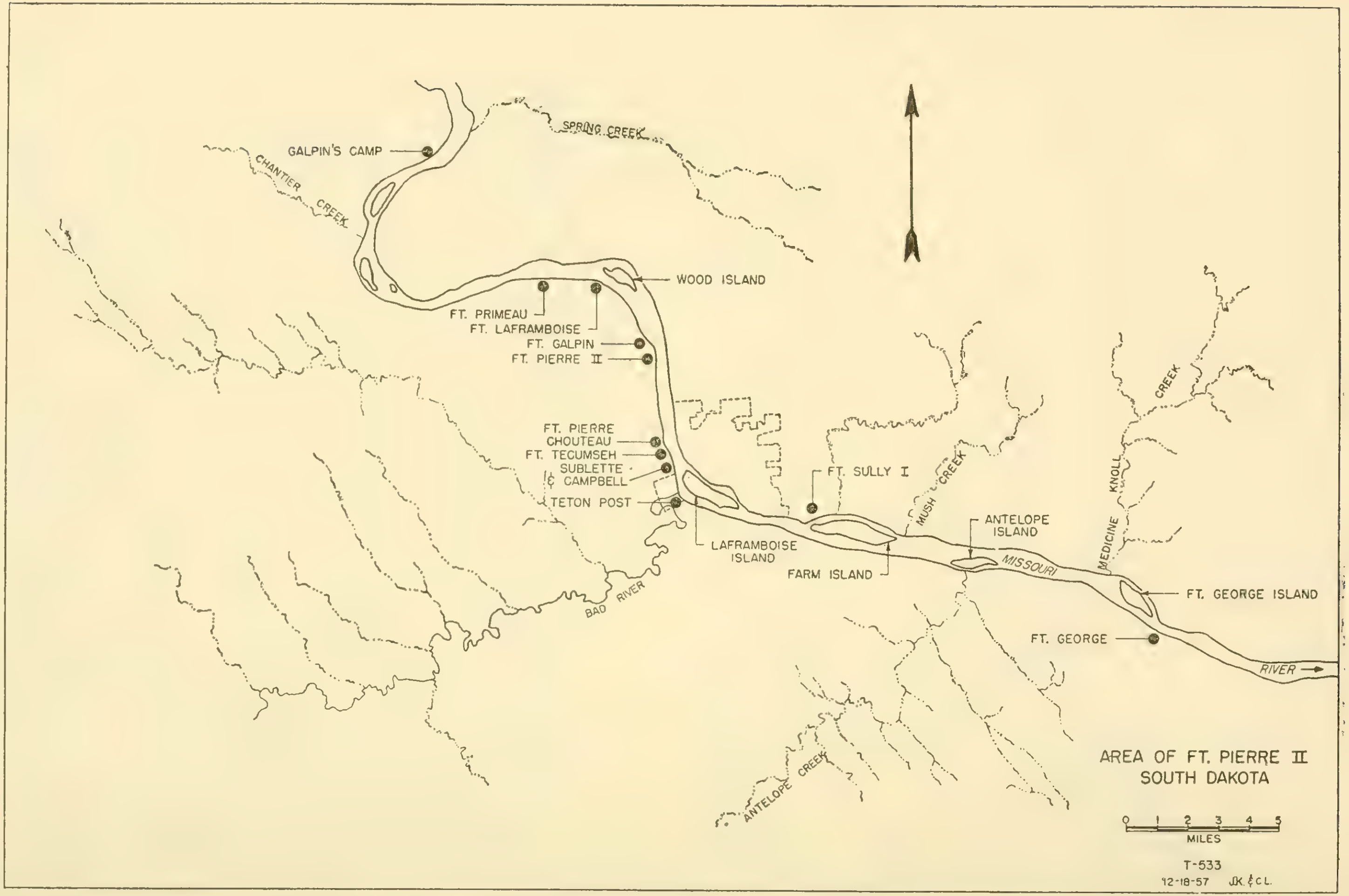
GALPIN'S CAMP
SPRING CREEK
CHANTIER CREEK
WOOD ISLAND
FT. PRIMEAU
FT. LAFRAMBOISE
FT. GALPIN
FT. PIERRE II
FT. PIERRE CHOUTEAU
FT. TECUMSEH
SUBLETTE & CAMPBELL
TETON POST
LAFRAMBOISE ISLAND
FARM ISLAND
FT. SULLY I
MUSH CREEK
ANTELOPE ISLAND
MISSOURI
MEDICINE KNOLL CREEK
FT. GEORGE ISLAND
FT. GEORGE
RIVER
BAD RIVER
ANTELOPE CREEK
AREA OF FT. PIERRE II
SOUTH DAKOTA
0 1 2 3 4 5
MILES
T-533
12-18-57 J.K. & C.L.

Map 3.—Area of Fort Pierre II, South Dakota.

FORT PIERRE II (39ST217) A HISTORIC TRADING POST IN THE OAHE DAM AREA, SOUTH DAKOTA [1]

By G. HUBERT SMITH

FOREWORD

From time to time since the establishment of the Missouri Basin Project of the River Basin Surveys, as funds and personnel were available, in addition to studies of native sites the Project has given attention to sites of White origin in areas to be flooded. Less numerous than native sites (both prehistoric and historic) in these areas, the White sites—fur-trade posts, military posts, and the like—have also been carefully studied, with actual excavation in certain instances, inasmuch as they have independent importance in the history of the region, as well as direct bearing upon its native history. This work by the Missouri Basin Project supplements and expands systematic documentary investigations of historic sites made by the National Park Service in these areas of the basin, including that of the Oahe Reservoir area.

The report that follows presents results of excavation at one such site of White origin, that of Fort Pierre II, a successor of a more famous original, Fort Pierre Chouteau, both posts having been operated by the St. Louis firm of P. Chouteau, Jr., and Company; Fort Pierre II was constructed after 1855, when the previous post was sold for military purposes. It is probable that the use of the later establishment, the site of which has now been partially excavated, was of relatively short duration, and that the post itself was of relatively minor importance even during its own period—one of rapid decline in the trade as a whole. These inferences call for a brief statement explaining why the present work was undertaken, in view of the urgent demands of numerous other sites.

The claims of historic sites known for reservoir areas in the basin cannot be allowed to overshadow those of the prehistoric and historic native sites so widely distributed throughout these sections of the Missouri valley. Furthermore, other sites of White origin are not lacking within the Oahe area itself, sites that still remain unexcavated, though of probably richer individual historic values than the present one. The general significance of any site—historic or prehistoric, Indian or White—scarcely affords more than clues, however, to actual historical or scientific values until careful excavations have been carried out. (This is not to deny historic values to "association sites," at which physical data are not recoverable by ordinary archeological procedures. An example of such a site would be an Indian treaty ground, used for but a few hours or days but pivotal in the general history of an area.) In the present instance, excavation has added substantially to knowledge of a period of mid-19th-century trade, then declining, about which relatively little has hitherto been known, and provides a part of the "documentation" ordinarily missing from customary records available to historians.

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[1] Submitted February 1959.

As one result of systematic documentary research by the National Park Service covering historic sites in the Oahe Reservoir area, it became apparent that such sites, to be adversely affected by construction of the dam and establishment of the reservoir, were not inconsiderable in significance or numbers (Mattison, 1954). Sites of forgotten ghost towns, of better-remembered military posts, and even of an important battle were among those to be flooded beyond hope of further study at some future time.

No single category of sites was, however, as large or generally important in the earlier history of the region as that of the fur- and Indian-trade posts of the last century. Extending from at least the period of the War of 1812 down to that of permanent settlement of much of the valley in the 1880's, surviving sites of these posts—visible physical remains of which have long since disappeared—preserve irreplaceable data of earlier times, written record of which is ordinarily scanty, or even lacking—data in part recoverable only through archeology. Actual physical details of individual posts, or properly recorded specimens illustrating life at such frontier communities and the conduct of the trade, on the other hand, are seldom to be found in customary document sources or museum collections. (Inventories of physical properties and goods at such establishments, a few of which have been preserved and published, seem to be rare; such sources, conversely, sometimes preserve detailed information not to be expected from even the most thorough excavations. Cf. McDonnell, 1940.)

An example of the meagerness of contemporary document sources concerning such commercial posts of the past century will illustrate the desirability of excavations at sites of the kind. Despite more than two decades of heavy use as a departmental headquarters of the dominant trading firm of the region, little would now be known of the plan or construction of the original Fort Pierre Chouteau were it not for the records made for the War Department at the time of its purchase as a military post—in a sense, fortuitous late records. (See plan and descriptions of this post in 1855 in DeLand, 1902, pp. 296, 348–349.) It is true that visitors such as Prince Maximilian and Edward Harris, the latter of whom accompanied John James Audubon to this place, left descriptions and a plan of the post that are of great value to the student (Mattison, 1954, pp. 24–25). Carl Bodmer, who accompanied the prince, even sketched the post from a distant point (Pope, 1954, p. 16; Rathbone, 1954, p. 220, reproduction of an aquatint from the Maximilian atlas). These sources, however, afford little more than a general impression of the establishment—literary and artistic interests, understandably enough, having centered upon the scenery and native peoples of the upper Missouri. In this fortunate instance, Federal archives thus materially aid the student in any study of design or construction of the post since archeological investigation is lacking. In such records alone, so far as is known, are specific details available concerning Fort Pierre Chouteau, such, for example, as would be required for authentic reconstruction.

These mercantile establishments of the past century—outposts of the first permanent occupation of the West—are, furthermore, less well known than other early White communities, such as military posts. As is apparent from comparison of sources compiled by the National Park Service (Mattison, 1954), military posts are, in general, well recorded in surviving archival materials, records contemporary with the design and construction of the forts. Such being the case, additions to knowledge of such military posts, possible or expectable from actual site excavation, are limited, and excavations, therefore, seem the less urgent. The fact that, by contrast, specific data for the trading posts are comparatively rare affords a justification for careful excavation, quite apart from any consideration of the importance of such sites in their own right. It may be added that, as compared with the fate of the military post on the Plains—several excellent examples of which still survive, some of them relatively little changed—the trading post, for various reasons, is less well remembered, no original posts having survived.

In view of the fact that the site here reported lies below the Oahe Dam, a word should be added explaining why it qualified as a salvage problem. The site lies near the alinement of a vast spillway, the function of which is that of a safety valve. Like several native sites of the area, this site is thus liable to almost instantaneous and total destruction, without warning, in an emergency, and clearly constituted a true salvage problem, if not one of the usual sort. In keeping with the principle hitherto applied to all large sites of the reservoir areas of the Missouri basin (historic and prehistoric alike), the excavations were designedly partial, sampling investigations. The data obtained, however, seem for the present to be fully adequate, affording as they do new light on various aspects of the physical history of the original establishment, and for the first time providing specific data on physical remains of a post in the central Dakota region. These data should become of even greater usefulness with future work on other historic sites, such as that of Fort Pierre Chouteau itself, and the present work provides part of the orientation for such future studies.

The archeological investigations here reported concern some 8 weeks of excavations carried on during June and July 1956, under the writer's direction. Assisting him throughout this period were Elmer R. Gardner and the late Peter Kuipers, both of Platte, S. Dak., and Larry J. Giddings and Robert R. Ricketts, of Fort Pierre. The conscientious, willing help provided by these men and their interest in their work are hereby gratefully acknowledged. Harold A. Huscher, archeologist of the Project, also provided welcome assistance with the instrument survey of the site.

HISTORICAL BACKGROUND

Perhaps few geographic locations in the West exhibit a greater concentration of sites of separate and distinct (though related) historic fur- and Indian-trade establishments, or one covering a longer time-span, than that of the junction of the Bad and the Missouri Rivers, in present Stanley County, S. Dak. (map 3). Soon after the end of hostilities, after the War of 1812, and the official restriction of the trade in the West to American citizens, one Joseph Laframboise, perhaps a former employee of the famous North West Company of Montreal, is said to have traded here in 1817 (Thwaites, 1906, vol. 22, p. 315 n., cited by Mattison, 1954, p. 17).

There appears to be nothing beyond traditional evidence of Laframboise having built here at this time, but the traditions are circumstantial and have the earmarks of authenticity (DeLand, 1902, pp. 373–374). According to them, Laframboise was a mixblood (French and Ottawa) who in 1816 had come by way of Prairie du Chien, Wis., licensed to trade on the upper Minnesota River. In the following year he is said to have built a store at the mouth of the Bad River (then commonly known as the Teton), obtaining building material from dry driftwood timber. The date in question is derived from two different Dakota "winter counts" (Mallery, 1886, p. 109, cited by DeLand, 1902, pp. 373–374). This probably modest establishment is said to have been used by its builder at least until 1819, and the memory of his residence near the Bad River is preserved today in the name of Laframboise Island, near its mouth, though the precise location of the post remains in doubt.

The next establishment for trade at this point appears to have been that of a group of former Montreal merchants, the Columbia Fur Company, probably in 1822. This firm (like Laframboise, no doubt, maintaining British ties and sympathies), of which William Laidlaw, Kenneth McKenzie, and James Kipp were prominent members, seems to have operated its post—named "Fort Tecumseh" for the Shawnee leader in the late war—until 1827, when the company was absorbed by the American Fur Company (DeLand, 1902, pp. 329–335). The precise location of the site of Fort Tecumseh is also in doubt. Some students believe that it was situated in N½ sec. 28, T. 5 N., R. 31 E. (Mattison, 1954, p. 23). DeLand (1902, p. 281, map), however, placed the site in sec. 21 of the same township and range.

Another post was also soon established nearby—that usually referred to as the Teton Post from an alternate name of the Bad River, and built in 1828 or 1829 by the St. Louis group of Pierre D. Papin, Gabriel P. and Michel S. Cerré, and Honoré Picotte, a group sometimes referred to as the "French Company," apparently to distinguish it from the American Fur Company, and perhaps from the Columbia (cf. DeLand, 1902, p. 374; Abel, 1932, p. 202, n. 20). Once again, precise location seems impossible; the site of the Teton Post is said to have been at the mouth of the Bad, but whether on the north or south side is uncertain (DeLand, 1902, pp. 374–375).

At this late date, it is improbable that the actual sites of Laframboise's post, of Fort Tecumseh, or of the Teton Post could be relocated. The entire area in question, adjacent to the mouth of the Bad River, has been much altered in recent years as a result of the growth of the city of Fort Pierre and through extensive changes in surface levels in and near it after the disastrous flood of 1952, and by the establishment of new street and highway grades. With the building of Fort Pierre Chouteau in 1831–32, however, the student is at last upon solid ground, the location and character of the post having been recorded in several sources contemporary with its actual use.

For the earliest trading establishments in the immediate neighborhood of the mouth of the Bad River, bottom lands had been chosen as sites, easy access to both the Bad and the Missouri having apparently weighed more heavily with the traders than other considerations. Experience with seasonal flooding, however, seems at length to have dictated that any new post be differently located. With the building of Fort Pierre Chouteau by the American Fur Company, as headquarters for its Upper Missouri Outfit, a new site was selected, approximately 3 miles upriver from the Bad and beyond the reach of its flood stages or of a conjunction of flood waters from the Missouri and the Bad, while retaining ease of access to the channel of the larger river. This site, located in NE¼SW¼ sec. 16, T. 5 N., R. 31 E., was marked in 1930 with a boulder bearing a bronze historical tablet (Mattison, 1954, pp. 24–28).

Still another early post was destined to rise in this vicinity, that of the firm of Sublette and Campbell, begun in 1833 as an opposition post but sold the following year to the larger Chouteau firm (then successors to the American Fur Company in the West). Again the precise location is in doubt, though the site may lie in SE¼ sec. 28, T. 5 N., R. 31 E. (ibid., p. 22). No other establishments of subsequent date are known for the immediate area.

Fort Pierre Chouteau, long headquarters of the trade in this region, and frequently visited by travelers, had by the year 1855 fulfilled its major historic role. Having survived noteworthy (though now little-known) changes in the nature of the trade itself during the preceding two decades, the old post was now the scene of a military occupation, and for a final brief period performed an essentially different function. This occupation was connected with campaigns against hostile Dakota (Sioux) Indian groups, conducted by military forces under the command of Bvt. Brig. Gen. William S. Harney, and entailed the purchase of the post for garrison and supply purposes. Thus the building of new posts by the traders for their own needs became necessary.

Unfortunately, data pertaining to these new trading establishments, following abandonment by the traders of the old post, are not readily available, and statements of historical students concerning them, frequently unsupported by conclusive evidence, are doubtful and confusing, or actually in disagreement. The following outline of the probable succession of events after 1855 is believed to be in the main correct, if inadequate in details. An attempt has here been made to proceed upon the evidence of contemporary documents or, lacking this, on the basis of reliable testimony of eyewitnesses given at later times. The attempt is not wholly successful, and search of the commercial papers of such firms as the Chouteau Company and its affiliates may provide data to fill in the scanty outlines now known, when detailed research becomes possible.

It is known from contemporary sources that the agent of the Chouteau firm, upon the sale of old Fort Pierre to the War Department in 1855, was Charles E. Galpin, frequently referred to elsewhere as "Major" (Galpin to Capt. P. T. Turnley, Fort Pierre, Nov. 1, 1855; Galpin to Turnley, Nov. 8, 1855; in U.S. War Dept., 1902, pp. 404, 412). The same sources reveal that Galpin had at this time lived in the region for 16 years, 10 of which (i.e., since 1845) he had lived "immediately at Ft. Pierre" (Galpin to Turnley, Nov. 8, 1855, ibid.). Galpin was to continue here for some years longer, as representative of the Chouteaus. With him, at one time, Charles Primeau seems to have represented the firm.

It is known that at some time prior to August 7, 1855, Galpin had established a camp about 4 miles above Chantier Creek, "with the party that vacated Fort Pierre on the arrival of the troops," at a site said to be good, having a considerable quantity of grass and wood, but little timber fit for building (Lt. G. K. Warren to Maj. O. F. Winship, Fort Pierre, Aug. 7, 1855, in U.S. War Dept., 1902, p. 392). The site of Galpin's Camp near Chantier Creek is indicated on a map, made to accompany the letter, by Warren and Paul Carrey, entitled "Preliminary Sketch of a survey of the Missouri R. near Ft. Pierre for the purpose of laying out a reserve for that Post," approved by Maj. W. R. Montgomery, commandant, Fort Pierre, August 8, 1955. (This original map, as yet unpublished, is in the National Archives, Record Group 77 (126–1), and a photostatic copy is in Missouri Basin Project files.) The camp is shown as situated immediately below the mouth of a small unnamed stream next above Chantier Creek, on the west side of the Missouri, at a distance from the creek of approximately 4 miles.

Of this new site at which the traders were located, some 16 miles upriver from old Fort Pierre, the comment was also made that while the landing was not good, it was better than that at Fort Pierre, and that, in general, the location was a "more eligible one"—i.e., probably, for trade purposes. There appears to have been some doubt on the part of the traders at this time of the wisdom of reestablishing themselves in the region. Warren comments "that the trade with the Sioux in this vicinity is ruined forever, and that it will not be profitable to incur the expense of establishing a trading post"—i.e., to replace Fort Pierre Chouteau (ibid., p. 393). Galpin himself revealed something of the problem in writing that "Fort Pierre is a barren and exhausted place" (Galpin to Turnley, Fort Pierre, Nov. 8, 1855, op. cit., p. 412).

The general area of Chantier Creek, the location of the traders in the summer of 1855, despite the comment on its suitability seems to have been utilized by them as headquarters for only a short time. The area previously had been used by the traders from old Fort Pierre as a source of timber, not available in sufficient quantities in the immediate vicinity of the mouth of the Bad River, and it is possible that depletion of timber near Chantier Creek and the advantage of location near the old site combined to cause a return downriver. It is probable that the establishment near Chantier Creek was used only during the winters of 1855–56 and 1856–57.

DeLand states that Galpin in 1857 began a new post to take the place of the old, and that this establishment was situated "about two miles north of the site of old Fort Pierre" (DeLand, 1902, p. 365; his map places this site in sec. 5, T. 5 N., R. 31 E., near its northeast corner; Mattison, 1954, p. 30, is in doubt about the precise location). This statement appears to be based upon testimony of Marcel C. Rousseau, who came to the area in the fall of 1857 as bookkeeper for the Chouteau firm, and later stated that when he arrived the stockade of this post was under construction. This new post (according to DeLand, whose data were doubtless from Rousseau) was about 125 feet square, and built similar to the first Fort Pierre except for the fact that it had no "bastions" (i.e., blockhouses). The stockade proper, on this authority, then "constituted about two-third of the entire enclosure," various buildings forming a part of the enclosure except along the front. DeLand states that the precise date of abandonment of this establishment is not clear, but that it was superseded by a "New Ft. Pierre." He also states that Galpin was in charge of the various posts of the Fort Pierre group used by the American Fur Company (i.e., the Chouteau firm) from the time of the building of this "Ft. Galpin" until the company went out of business at this point, and that as late as about 1865 he assisted in hauling timber from "old Fort Pierre" with which to construct a store on the east side of the river, near the first Fort Sully military post, adjacent to Farm Island, in present Hughes County.

DeLand further states that in 1859 a second Fort Pierre, or "New Fort Pierre," was built in this area, though some work had probably been done on it the previous year (DeLand, 1902, pp. 369–370). This establishment, he states, was situated 1⅞ miles above (north of) the site of old Fort Pierre, and "some twenty rods or so south of the southern end of an island at that point in the Missouri River." This statement probably refers to a timbered flat, now joined to the mainland, below Wood Island, and lying largely in sections 32 and 33, T. 5 N., R. 6 E. (Cf. Corps of Engineers map, 1947, sheet 68. The original General Land Office plat of the township reveals that by 1890 this flat had already been joined to the mainland. Cf. G.L.O. plat of T. 5 N., R. 6 E., Black Hills Meridian, in South Dakota Department of School and Public Lands.)

DeLand was unable to state the source of timber used in building this "New Fort Pierre," but thought that there was little reason to doubt that before it was completed some of its materials had come from the old post, i.e., that abandoned by the traders in 1855. This is confirmed by a brief entry in Raynolds' journal for September 10, 1860, made while he was en route downriver to Fort Randall, an entry that gives a final glimpse of the famous old trading post, Fort Pierre Chouteau: "As we passed old Fort Pierre I noticed that but little was left of the structure, the remains consisting of the shell of one row of houses, and the demolition of this was in progress, the material being used in the new fort [i.e., Fort Pierre II]" (Raynolds, 1868, p. 121).

Joseph Wandel, who about this time was employed by the Chouteau firm (or by someone connected with it), is quoted by DeLand concerning this "New Fort Pierre." From this source it is probable that after the abandonment by the War Department of the original Fort Pierre, about 1857, building materials were moved upriver from it to the new site adjacent to "Seven-Mile Timber," and just opposite the lower end of the timber, about 300 yards from the river. (This location may be the same as the island referred to above, lying in sections 32 and 33.) "We had to cut the brush away," Wandel is quoted as saying, "because the Indians would lay there and kill people. They did that several times, the Rees [Arikara] and Gros Ventres [Hidatsa]." Wandel added that the "second Fort Pierre" stood until the "steamboat people" took the houses, i.e., for fuel; "Nobody knows how it was burned up." From his account, quoted verbatim by DeLand (1902, pp. 369–370) it is clear that persons other than steamboat-fuel suppliers made use of the materials from the second post; Wandel refers to freighters of army supplies as also taking what they needed.

Basil Claymore (or Clement), another informant, also testified concerning Fort Pierre II—situated "at the foot of the island." Claymore stated positively that Galpin was in charge of both old Fort Pierre and the new post, remaining in charge until the company quit business in the area (i.e., about 1865), though he also added that he (Claymore) had served under two "bosses"—Galpin and Primeau. Charles Primeau appears to have been in charge of "New Fort Pierre" in June 1862 (perhaps during a temporary absence of Galpin), at the time of the murder of Bear's Rib, an important Dakota chief favorable to the Whites, by a group of hostiles—an event referred to in several sources (Primeau, "agent in Charge of Ft. Pierre," June 20, 1862, and Samuel N. Latta, Yancton, D. T., Aug. 27, 1862, summarized by W. G. Robinson, 1954, vol. 27, pp. 298–299, 305–306; testimony, of Wandel and Claymore in DeLand, 1902, pp. 366–368).

The matter of the precise location of Fort Pierre II, more fully dealt with in the following section, is of importance in view of the fact that, as has been seen, there were several separate but roughly contemporaneous posts in the vicinity, at least two of them in the immediate neighborhood (Fort Galpin and Fort Pierre II). Brief mention will here be made of two further establishments, of somewhat later date on the basis of available evidence. (Several clearly erroneous statements about these various posts appear in the general article by Wilson, 1902; DeLand, 1902, has corrected these errors.)

DeLand's data record the former existence of a Fort Laframboise (i.e., the second of that name, not to be confused with that of 1817 at the mouth of the Bad River), which he locates in sec. 25, T. 6 N., R. 31 E. (DeLand, 1902, pp. 365–366 and map; Mattison, 1954, pp. 31–32, places the site in sec. 30, T. 6 N., R. 30 E.). This post is said to have been established by the firm of La Barge, Harkness, and Company in 1862 and to have been operated, for a short time only, by Frank Laframboise, a descendant of Joseph, previously mentioned. The location given would place the site in the immediate vicinity of the Oahe Dam, but it has been impossible to verify the statement. In all probability, any remains at this point were obliterated during the construction of the dam, beginning in 1950, prior to systematic search for historic sites in the area in question.

One other trading post mentioned is Fort Primeau, which is said to have been built and occupied by Primeau early in the 1860's, and probably before 1862 (DeLand, 1902, p. 378; cf. also his map, opp. p. 281). This establishment is said to have been situated in sec. 26, T. 6 N., R. 30 E., "a short distance above the Fort LaFramboise of LaBarge, Harkness & Company," and just below and opposite Peoria Bottom, on high ground and near the edge of the bluff. It has been shown above that Primeau had, in June, 1862, been in charge at Fort Pierre II, apparently during Galpin's temporary absence, and it seems improbable that he would simultaneously have had a second trading post, scarcely 5 miles distant. DeLand's suggestion concerning the date of "Fort Primeau" therefore seems doubtful. Mattison (1954, p. 32) states that this post belonged to La Barge, Harkness and Company, but no evidence is cited to support his statement that Primeau was a "partner" of that company, a firm opposing the Chouteau interests, whose agents in 1862 are known to have been Primeau and Galpin. It is, finally, quite possible that in identifying a "Fort Primeau" as in existence in 1862 (a post separate from Fort Pierre II) DeLand (who is followed by Mattison, 1954, p. 32) may have been in error, inasmuch as the terrain in sec. 26 is quite unsuitable for the location of a post. No intensive search has, however, been made of the terrain in this section, so far as is known, though it is probable that large-scale cutting, by the river itself against the bluffs of the south side of the valley at this point, may long since have removed any physical traces of "Fort Primeau."

The present study is particularly concerned with the physical history of the establishment known as Fort Pierre II, evidence for which is preserved in a few documentary sources, to which new data can now be added from excavations of the site of the post. No complete review of the general history of the fur- and Indian-trade on the upper Missouri can here be attempted, desirable as such a review would be for proper understanding of the significance of this particular post. That topic is much too large and complicated to undertake here, and adequate sources for such a review are, in any event, not yet available in print. The history of Pierre Chouteau, Jr., and Company—otherwise the Upper Missouri Outfit of the American Fur Company—itself remains to be written, and only portions of the general commercial history of the upper Missouri have thus far been published. The historic role of Fort Pierre Chouteau and other trading centers in its immediate vicinity, including Fort Pierre II, merits more attention than it has yet received, and the topic has apparently been seriously attempted only once (Wilson, 1902). It is possible, however, to gather certain facts about historic events in this area, which provide some of the background for understanding of the physical history of the later post.

It has been noted above that until its sale in 1855 Fort Pierre Chouteau had for a number of years served the Chouteau firm as departmental headquarters for their Indian trade over a large region. It is known that from this base of operations, under the general administration of a resident superintendent (ordinarily called the *bourgeois*, or "boss") such as William Laidlaw, Honoré Picotte, and Alexander Culbertson, the firm drew the proceeds of a vast reservoir of furs and hides, from which point they were transshipped to St. Louis, and to which large shipments of commodities of all kinds were dispatched by steamboat, to be distributed among many different native groups. Thus, in the year 1851, from Fort Pierre, Picotte supervised the trade at Fort Lookout and Fort Vermillion, downriver, and Fort Clark and Fort Berthold, upriver, besides many lesser stations (Kurz, 1937, p. 235).

The entry of the steamboat is a major historic factor in any study of the trade of the 19th century on the upper Missouri. First successfully adapted to the upper river with the building of the famous *Yellowstone*, which in 1831 reached Fort Tecumseh, and the following year Fort Union, near the mouth of the Yellowstone River, the steamboats permitted bulk shipments far beyond the scope or speed of previous watercraft such as rafts and keelboats, and led the way to a truly modern commerce. By 1859, when Fort Benton was reached, steamboat navigation had been extended to the very foothills of the Rockies. By that period, furthermore, the Chouteau interests dominated the trade over a vast region—far beyond the Missouri valley proper—and, in fact, constituted a monopoly, despite frequent challenge, usually unsuccessful. The scale of these operations may be judged from the fact that a single season's furs and hides from the upper Missouri sometimes reached the valuation of a half-million dollars (Thomas Forsyth to Lewis Cass, St. Louis, Oct. 24, 1831; in Forsyth, 1957, p. 206).

Detailed information on the trade, on either "imports" of furs and hides at St. Louis or "exports" of commodities for the trade from that place, are not readily available, though such data would aid materially in understanding the beginnings, development, and decline of the trade in the West during the 19th century. It is, however, apparent that by the late 1830's—about the period of entry of the steamboat as a new and different factor—there was a shift of emphasis from the smaller peltry (particularly the beaver) to the larger buffalo hides and robes.

Thus in Joseph N. Nicollet's important geographical report the statement is made that the Chouteau firm after 1839 almost entirely suspended operations in the Rockies, where previously they had employed from four to five hundred trappers and hunters, nearly a thousand horses, and from two to three thousand dollars' worth of merchandise (Nicollet, 1845, p. 65). In 1840, said Nicollet (probably on the basis of information furnished him by the Chouteau firm itself), the principal posts were withdrawn, the company "limiting itself to the purchase of buffalo robes, and other peltries of less value." Reasons advanced in his report include that of the difficulty of competing with the Hudson's Bay Company, lacking "certain privileges" refused it by the Congress; the "enormous duties" to be paid on goods imported for the trade, as well as those levied by the United Kingdom, defeated the company's operations or "rendered them too onerous." Such statements, doubtless intended to influence political action on behalf of the traders, specifically the Chouteaus, reveal something of the intricacy of the historical development of trade in the West.

With the steamboats, others besides traders also visited the region, often as guests of "the company." Travelers such as George Catlin, Prince Maximilian and Carl Bodmer, Nicollet and John C. Fremont are among those who came, particularly during the 1830's. By the 1850's, the U.S. Army also found ways to go to the upper river by steamboat, as in 1855 when Harney's troops were transported thither from St. Louis in the course of his expedition against the Sioux.

Among the travelers, at least one left some record of Fort Pierre II, which, according to custom, he calls Fort Pierre, ignoring the fact that the original Fort Pierre Chouteau had already passed into history. This was the German-born artist, Charles Wimar, who in both 1858 and 1859 came by steamboat, probably also as a guest of the Chouteaus. Wimar later prepared a plate of drawings, showing each of the more important establishments of the firm (reproduced in Chittenden and Richardson, 1905, vol. 2, frontispiece). The location of the original of this plate—drawings probably intended for lithograph engraving—is not now known, but individual sketches of some of the subjects (e.g., Fort Berthold I, in present North Dakota) have fortunately been preserved. Inasmuch as Wimar's first visit to the upper river did not take place until 1858, after the abandonment and probable disappearance of old Fort Pierre Chouteau, his sketch of that post must have been based upon some other view, perhaps that made by Bodmer in 1833, and lithographed in color in the atlas accompanying Maximilian's Travels (published in Coblenz, 1839–41). It is curious but understandable that Wimar, on his plate of drawings, should have shown a post formerly used by the company here, Fort Pierre Chouteau, rather than that then actually in use, Fort Pierre II. Nor is any finished drawing of the latter to be found among surviving drawings by Wimar.

Wimar's primary purpose on the occasion of his visits to the upper river was, of course, particularly to sketch and paint the Indians and the scenery, and his field books (still in large part unpublished, but carefully preserved at the City Art Museum of St. Louis) furnish a valuable record of the upper river including the Fort Pierre region at this period, some 25 years after the visits of Catlin and Bodmer (Rathbone, 1946, pp. 18–20; 48; 74). Leaving St. Louis in May, 1858, on the first trip upriver, he first encountered Yankton Indians above Sioux City, who had been invited aboard the boat by an Indian agent also en route upriver. Above Fort Randall, Wimar was also to see Ponca and Brulé, and more Yankton Indians. At Fort Pierre (i.e., Fort Pierre II) there were gathered several hundred Dakota, with their women and children; portraits of as many as possible of them Wimar endeavored to obtain during the very brief stay, the steamboat (*Twilight*) carrying the party farther upstream the same afternoon (July 12). It is known that Wimar had with him on this journey an ambrotype camera, but no specimens of his photographic work are now known, and his efforts may not have been successful.

In Wimar's sketchbooks are numerous excellent drawings and portrait sketches of various Indian men and women, doubtless obtained on this trip; among these is a likeness of Bear's Rib, a Dakota chief, of whom more is said hereafter, and of whom Wimar subsequently painted an oil portrait also extant. Another hasty sketch, intended to show particularly the arrangement of groups of Indians gathered near the steamboat, seems to show Fort Pierre II as well, though with little attention to detail. In 1859 Wimar returned by boat to the upper river, adding to his drawings as before.

One other visitor to the region during these years was Capt. William F. Raynolds of the Corps of Engineers, who in the summer of 1859, accompanied by the eminent geologist Ferdinand V. Hayden, Lt. Henry E. Maynadier, and others, explored the upper Missouri and Yellowstone valleys. On June 18 of that year Raynolds held a council with the Indians at Fort Pierre, at the same time issuing the annuities (annual payments of goods and money) due the Teton; returning downriver, the party was once more at the post from September 8 to 10, 1860 (Raynolds, 1868, pp. 120–121.).

By the admission to the Union of the State of Minnesota in 1858 the remainder of the former Territory of the same name (which had extended to the Missouri River itself, touching the Territory of Nebraska, established in 1854) was left without territorial government. Various delays postponed the creation of Dakota Territory until 1861, when it was formed of this unorganized remnant east of the Missouri, and a portion withdrawn from the Territory of Nebraska, lying west of the Missouri. Few settlements had, however, been made in the area that was to become Dakota Territory, even by 1861. In 1857, townsites had been promoted at Medary, Flandreau, and Sioux Falls, but settlements at the first and second were abandoned the following year, and that at Sioux Falls had to be defended from the Indians by fortifying the tiny community. In 1859, settlements were made at Yankton, Vermillion, and Bon Homme. At the census of 1860, less than five thousand persons (Indians apart) were claimed for all of the area of Dakota Territory, which then comprised the area of both of the present States.

Data collected by the enumerators at the census of 1860 provide some further light on trade activities in the Fort Pierre area during the brief existence of Fort Pierre II. Original census schedules covering this area have not been located, but the printed abstracts of the census record the fact that 17 persons were found at "Ft. Pierre" in that year, presumably including most of those then residing near the mouth of the Bad River (U.S. Census Office, 1864, p. 552: "Territory of Dakota").[2]

The total of 17 persons tabulated for "Ft. Pierre" probably included all those regularly residing at Fort Pierre II (the only trade establishment then in existence in the area, so far as is known). Lacking the original schedules, however, it is impossible to determine whether persons not actually part of the personnel of that post were also included. The composition of the group of 17 is of interest: three White and seven Indian males, and one White and six Indian females. It is known that Galpin's wife was a prominent Sioux woman, a daughter of Two Lance and previously the wife of Honoré Picotte, by whom she had two daughters. By Galpin she also had two or more sons and two daughters (Holley, 1892, p. 284; Hayden, 1862, pl. 1 and p. 457 n.). It is doubtful that Mrs. Galpin was the White woman counted, but the identity of that person is not known.

Though it cannot be proved that all 17 persons counted were part of the personnel of Fort Pierre II, as has been noted, at least that number would probably have been needed to manage the post. The fact that both Whites and Indians were listed for "Ft. Pierre" is also of interest. The employment of Indian personnel was customary at such establishments; native or mixblood males frequently were employed as hunters, whose responsibility it was to provide game for the subsistence of the posts, and they also had other duties; Indian women were doubtless also employed from time to time. It is of course possible that of the 13 Indians counted here some were included who were actually no more than camp followers, who happened to reside near the post but had no direct relation with it.

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[2] All of the present State of South Dakota west of the Missouri River was contained in the Territory of Nebraska from 1854 to 1861. Original schedules of the census of 1860 for that Territory are preserved in the National Archives and at the Nebraska State Historical Society, Lincoln, and the latter institution has microfilm copies of the schedules at the National Archives. These schedules do not, however, include entries for the Fort Pierre area, nor for any of several river settlements counted above Fort Randall. Inasmuch as the abstracts of the census were not published until 1864, after the organization of the Territory of Dakota (including, in its original form, all of the present States of North and South Dakota), it is possible that data for the parts of the former Territory of Nebraska, including the Missouri River settlements, were then shown under the newer political subdivision, the Territory of Dakota.

By a treaty made at Washington in 1858 with the Yankton tribe, a large part of the present State of South Dakota east of the Missouri had been opened for legal settlement, with the exception of a reservation in present Charles Mix County (D. Robinson, 1904, pp. 248 ff.; W. G. Robinson, 1954, pp. 246–249, digest of treaty of April 19, 1858). This cession was, however, unpopular with the Yankton, and caused dissension among the Yanktonais and Teton, who also claimed the area. Not until much later were further White settlements made along the Missouri above Yankton, and then only after the virtual disappearance of the steamboat. Such permanent settlements in present-day North and South Dakota could not, in fact, come about until after the Indian Wars of 1862–66, and the dispersal of most of the native occupants of the region, ever farther west.

Two noteworthy events occurred in the vicinity of Fort Pierre II during its brief existence; the first was the murder, previously referred to, of a prominent Dakota leader, Bear's Rib, in the immediate vicinity in June 1862, at the hands of his own people. Events leading to this murder may be briefly summarized here.

By the early 1850's, occupation of the territory tributary to Fort Pierre had been divided between two groups of the Dakota who had dispossessed earlier native occupants of the area. These were the great Teton nation and the smaller, closely related Yankton and Yanktonais. Though no fixed boundaries marked the range of these vigorous and then powerful peoples, the Teton (particularly the Oohenonpa or Two Kettle, Miniconjou, Uncpapa, Brulé, Blackfoot, and Sans Arcs subdivisions, constituting embryonic tribes) ranged particularly to the west of the Missouri, while the Yankton and Yanktonais ranged specially to the east.

Bear's Rib first appears in history in 1855, when he was appointed "first chief" among his people by General Harney (Warren, 1856, quoted in Robinson, 1904, pp. 227–230). He was referred to as a "great warrior," and was the leader of a mixed group of Miniconjou, Sans Arcs, and Oohenonpa (Primeau, June 20, 1862, quoted by Robinson, 1954, p. 305). In the summer of 1856, an exploring party under Lieutenant Warren encountered him in the southern Black Hills, at which time he promised to endeavor to influence his people not to molest that party, which was striving to penetrate as far as Bear Butte, in the northern Hills. Bear's Rib, however, protested vigorously to Warren that if the "treaty" presents (by the arrangement of the previous year) had been intended to purchase right of entry into the Hills, they were not wanted by the Sioux, nor did the Indians want them if they were intended to induce them not to go to war with the Crow and their other enemies. "All they asked of the white people," Warren quoted him as asserting, "was to be left to themselves and let alone . . ." (Warren, 1856, in Robinson, 1904, pp. 227–230). Subsequently, Bear's Rib, who appears to have been an able leader despite later strong disaffection among the Dakota themselves, met Captain Raynolds at Fort Pierre II, where he protested the provisions of the Yankton Treaty, and Raynolds reported the able speech of Bear's Rib in his own words (Raynolds, 1868, p. 20; also in Robinson, 1904, pp. 249–250).

By the provisions of various agreements such as the Treaty of Fort Laramie, of 1851, and the unratified "treaty" made at Fort Pierre by Harney in 1855, annuities were made to various peoples of the area centering about Fort Pierre. These annuities were paid during special visits of then nonresident agents of the Indian Office. Thus in the spring of 1862 there came to Fort Pierre between two and three thousand Sioux, from seven bands, to meet the agent, Samuel N. Latta. The Indians with one exception refused to treat with Latta at this time, however, or to accept any "presents." This exception was Bear's Rib, who, "after persuasion," accepted goods for his band though claiming that in so doing he was endangering his life and that of his followers, and who asked that no more goods be brought unless under military protection. A few days later, a party of Sioux "came in from the prairies," killed him and several of his people, and compelled the remainder to flee (Robinson, 1954, p. 288; report of W. P. Dole, 1862).

Bear's Rib had been at odds with other Dakota leaders because of his adherence to the Whites. Latta himself, in his report of the affair, mentions that the chiefs had protested that they were in the minority, that they "had been promised protection," that the amount of the annuities was so small as to promote discord rather than harmony among the Indians, and the like. Other chiefs present at the council seemed to be agreed, withholding their approval of the annuity payments and refusing future benefits. Only Bear's Rib, whom Latta refers to as an Uncpapa chief "appointed" by Harney and "a brave and good man," remained friendly to the Government, though apparently well aware of the risk to himself. Latta stated that a few days after he had delivered the annuity goods, a portion of the Sans Arcs who were opposed to intercourse with the Government appeared, and "within the gates of Ft. Pierre" killed Bear's Rib and several others (Robinson, 1954, p. 299; report of S. N. Latta, Aug. 27, 1862; Robinson identifies the post in question as Fort Laframboise, but this seems doubtful).

The facts leading to the slaying of Bear's Rib are not entirely clear, but it is probable that the activities and methods of the traders (the immediate beneficiaries of money payments under annuity provisions) played a part. It is not difficult, in any event, to understand the murder of even a prominent tribal leader, particularly one known to be favorable to the Whites, by adherents of some other leader.

Charles Primeau, agent of the Chouteau firm in charge of Fort Pierre at the time, was a witness of this murder, and a letter has been preserved, written by him to his employers and thence forwarded to the Indian Office, which supplies some further details of the incident (Robinson, 1954, pp. 305–306, appendix to report of 1862). On June 5, 1862, Primeau stated, a party of Miniconjou and San Arcs arrived at the fort "from the prairie" (i.e., a party of hostiles). No other Indians were there at the time, except some of Bear's Rib's young men (themselves on the watch for an Arikara war party), who had moved down to the Bad River the day previous. There were about one hundred lodges under Bear's Rib, comprising Miniconjou, Sans Arcs, and Oohenonpa Sioux. According to Primeau, these Indians had, when occasion arose, "protected us" (i.e., the traders) from the Indians of the prairies. For this reason, he reported, and because they were accustomed to receive presents, they were not on good terms with the other Indians. The latter announced that they had come to kill Bear's Rib and five principal men of the "friendlies." Hearing of this, Bear's Rib decided to try them, and appeared alone at the post on June 6. "He was traitorously shot down by the Sans Arcs," wrote Primeau, but before dying he killed the Indian who had shot him, while another Indian was shot by his men. Bear's Rib was quoted as having said that Harney had promised to aid him, but that the Government had not done so, that he had often been warned that he would die at the hands of his own people, that he hoped the Great Father would now protect his (Bear's Rib's) people, and that he had never desired that soldiers be sent into the area, though now he hoped they would be, in order to protect his friendly people.

Primeau added numerous other statements attributed to Bear's Rib. It is clear that Primeau was much alarmed, and the points made in the chief's statement express many of the fears of the traders as well. Fort Pierre II, said Primeau, was so situated that its employees were obliged to allow the Sioux to enter the fort, not knowing whether the Indians came with good or evil purposes. "They not only abuse and insult us but also the Government." The troops at Fort Randall, downriver, which he numbered at four hundred, were of "no earthly use" in that place, he felt; the summer and fall were the time for troops to appear at Fort Pierre, especially since in all probability the fall or winter would produce further troubles, or the spring, with the passage of the steamboats to Fort Benton. It is worthy of note that these events at Fort Pierre, and the murder of Bear's Rib, were separated by little more than 2 months' time from the violent outbreak of the Santee Dakota on the Minnesota River, not far distant, and the fears of the traders for their own safety, even on the Missouri, were probably well founded.

In addition to the contemporary account of the murder of Bear's Rib contained in Primeau's letter, reminiscent accounts of the event have also been preserved from the recollections of three eyewitnesses—David Gallineaux, Louis La Plant, and Basil Claymore (DeLand, 1902, pp. 366–368). These circumstantial statements preserve certain other details. Joseph Wandel, an employee of the Chouteau firm, recounted (to DeLand) the event as related to him soon afterward by Gallineaux, who believed that the murder and accompanying trouble were "the worst thing that ever happened at Ft. Pierre." All the cattle of the post, he stated, were killed by the Indians at that time, and it was necessary to go to Sioux City for cattle with which to transport buffalo robes downriver.

Gallineaux described the murder in vivid detail, stating that when Bear's Rib came up to the post he was alone, mounted on a mule. Having tied the animal, he then entered Primeau's house (i.e., inside the stockade), where Primeau's wife offered him coffee and bread, which he refused. While Bear's Rib was talking (Gallineaux told Wandel), news was brought him that his mule had been shot by the hostile Indians, upon which he went out, carrying a double-barreled shotgun. Outside the stockade he saw no one, the nearest tipi being about 30 paces away. Looking at his mule, and in the middle of speaking of the fact that this was the third such "trick" that had been played upon him, he was fired upon by a man in the nearest tipi. Bear's Rib immediately shot and killed this individual, and attempted to kill another; he had actually fired twice before the bullet he himself had received (in left forearm and heart) caused him to fall. When he had fallen, the hostile Indians ran to the trading post, opened the gate, and rushed inside, seizing everything they could lay their hands upon. They then closed the gate, the fort being everywhere filled with Indians. Bear's Rib's own people, camped near the Bad River, having been notified, also went to the post, mounted on horses, only to find the gate barred. Inside, the White men (Primeau and others) were virtual prisoners.

Bear's Rib's party demanded of the hostiles admittance to the fort, but received no answer; they then appealed to Primeau, who dared not admit them, but in his turn argued with the hostiles, whom he finally induced to make retribution by payment for the killing of the chief, a serious offense in native eyes. Before this could be arranged, the Indians outside had killed all the dogs and horses of the hostile camp. Gallineaux recounted numerous other details, adding that had it not been for the influence of Primeau upon the hostiles within the post no settlement of the affair could have been made. The situation had been very dangerous for Primeau because the friendlies, being well armed, could have "cleaned out" the hostiles within the stockade. Finally, allowing the latter a length of time to leave the post, the other Indians pursued them for 3 days' time.

La Plant and Claymore were also actual witnesses, the former having caught Bear's Rib as he fell; the chief had been struck while standing some 20 feet south of the southeast "bastion corner" of the post, where La Plant and others were preparing coffee over a campfire. The body of Bear's Rib was later buried near the post by its employees and numerous friendly Indians. The individuals who had killed the chief were identified by Claymore as Ousta (One that limps) and Tonkalla (Mouse) (DeLand, 1902, p. 368).

The killing of Bear's Rib is associated in one local tradition of doubtful validity with a large boulder located at the base of the bluffs, west of, and visible from, the site of Fort Pierre II; according to this tradition the victim was there murdered with arrows. No attempt can be made to explain the confusion over the weapon responsible for the killing, but it is possible that, rather than marking the site of the killing, the boulder actually marks the site of the burial of Bear's Rib.

Another noteworthy event in the history of Fort Pierre II was the liberation of the Lake Shetek captives and their return to safety here in late November 1862. As part of a broad campaign of bloodshed, on August 20, 2 days after the outbreak of the Santee Dakota in Minnesota, an attack was made on a small White settlement on Lake Shetek, in Murray County, Minn., one of several such advanced frontier settlements. Indiscriminate killings there left only 10 women and children, who were made captive and were taken toward the Missouri River. (The events are fully detailed, from contemporary evidence and surviving witnesses, Indian and White, by Robinson, 1904, pp. 301–313.)

Galpin, returning downriver with a party of miners from Idaho, and accompanied by his Dakota wife, came upon Indian bands with these prisoners from Lake Shetek near the mouth of Beaver Creek (in present Emmons County, N. Dak.) in November, but his party was fired upon, and only narrowly escaped. At the trading house of Charles Primeau (i.e., at Fort Pierre II) he told of his encounter with the hostile band that held the captives. A group of 10 young warriors of the Two Kettle (Teton) tribe—probably members of the "Fool Soldier" military society—was organized by Waneta (also known as Martin Charger, and reputedly the grandson of Meriwether Lewis), and obtained provisions from Primeau for the purpose of going to their rescue. Finding the hostiles under White Lodge encamped opposite the mouth of the Grand River (present Walworth County, S. Dak.)—themselves apparently now fast running out of provisions—Waneta and his band were able, after much parley and further risks to the White prisoners, to exchange them and to effect their safe return to Fort Pierre, whence they were taken to Fort Randall and ultimately to relatives. From the recollections of 1st Sgt. A. M. English, it is known that his company (A, of the Dakota Cavalry) reached Fort Pierre shortly after the captives, under escort, had departed for Fort Randall, whither the company itself returned a few days afterward (English, 1918, pp. 261–262).

For several years, beginning with the summer of 1862, all events in the Missouri valley were oriented about a single major theme, that of the subjugation and pacification of the Sioux, and amid the swirl of events of the following years, Fort Pierre II fades into obscurity. At the outset, the famous outbreak of the Santee concerned only these more easterly relatives of the Teton, Yankton, and Yanktonais, and the Dakota of the Missouri valley proper were never involved in fully organized rebellion, as were the Santee. With the flight of remnants of hostile Santee bands into Dakota Territory after the campaigns against them of Gen. Henry H. Sibley of Minnesota, in August and September, the westerly Dakota became ever more involved in the hostilities.

Early in 1863, plans were laid for punitive expeditions against all the Sioux, and one column, largely infantry under Sibley, moved from the Minnesota Valley to the Devil's Lake region, while the other, largely cavalry under Gen. Alfred Sully (which it had been intended should converge with the first), moved somewhat belatedly to the same area. (The full details of these campaigns have been ably recounted in Folwell, 1924, vol. 2, pp. 265–301.) Sully, who was unable to proceed beyond Fort Pierre until August 21, and thereby failed to join Sibley, engaged the hostiles at White Stone Hill (in southeastern North Dakota) on September 3 and 5, Sibley having previously clashed with hostile Indians at Big Mound, Dead Buffalo Lake, and Stony Lake, in late July. With the year 1864, Sully was to assume the chief role in further pursuit of the recalcitrant Sioux, his campaign of that year culminating in the battle in the Killdeer Mountains, July 28–29, where the camps were largely those of Teton Dakota. During 1865 there were still further campaigns, ended only by a Peace Commission that met in the fall at Fort Sully, a new military establishment below Fort Pierre.

Few details seem to have been preserved during these troubled years of events at Fort Pierre II, or about its trade. James Harkness, in a diary of a journey upriver to Fort Benton, and returning to St. Louis, in 1862, refers briefly to the post in an entry made September 20

(Harkness, 1896, p. 359). Harkness was a member of the short-lived opposition firm of La Barge, Harkness and Company, whose trader in the Fort Pierre area, Frank Laframboise, had just established the new opposition post, Fort Laframboise, above Fort Pierre II (cf. p. 95). Departing downriver from his company's new establishment, Harkness mentions reaching the older post in a gale and obtaining there some meat and other things during an hour's stay, so it is clear that relations between the opposed traders were then cordial. Perhaps the ominous state of Indian affairs—it was then little more than a month after the Minnesota outbreak—drew the traders together as nothing else would have been likely to do.

Among the units combined in Sully's force of 1863 were several volunteer cavalry and infantry units. When the force collected in July in the Fort Pierre area, a temporary depot seems to have been established at Laframboise's post, to which the 41st Iowa Infantry (actually mounted) was assigned, and where some of the military supplies were deposited, the remainder aboard the steamboats that had brought the troops upriver. The 6th Iowa Cavalry is said to have camped "under the bluff below the fort" (i.e., Laframboise's post, and probably somewhere near Fort Pierre II), and the 2d Nebraska Cavalry above it, while the 7th Iowa Infantry was left "at the site of old Fort Pierre, 3 miles [sic] below" (Wilson, 1902, p. 307; probably based upon Sully's reports).

A brief reminiscent account of experiences during the Sully expeditions, based upon a diary kept at the time by Frank Myers, a private of Company B, 6th Iowa Cavalry, gives some further details of these months of the summer of 1863 (Myers, 1888, p. 6). From this source it is known that Myers' unit reached "Ft. Pierre" about June 5. While there, an Indian scout, Crazy Dog, brought in a captive white woman, Lavinia Engels, who had been taken prisoner at New Ulm the year previous—a widely reported incident. Myers refers to "Ft. Pierre" (i.e., Fort Pierre II) as "only a trading post belonging to the Northwestern Fur Co., which was at that time doing an immense business buying hides from trappers and Indians."[3]

Myers noted that after a brief stay at Fort Pierre, his company moved 25 miles upriver and camped, but that after 2 or 3 weeks there, the Indians had become so numerous and aggressive that his unit was compelled to return to the fort to await the arrival of ammunition, their supply having run short. On July 7, the balance of the command having arrived, Myers' company moved across the river by steamboat to meet them. Thence the command was moved to the mouth of Little Cheyenne Creek, in present Potter County, S. Dak.

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[3] The Northwestern Fur Co. is known to have been formally organized by Hubbell & Hawley, of St. Paul, in 1865, but it seems to have been active previously (cf. Kane, 1955, p. 325). The firm had purchased the upper Missouri posts of the Chouteau firm, including Fort Pierre II.

At the close of the campaign of 1863, Sully had returned to the Missouri—the only avenue of supply for military goods in quantity, by steamboat—and during the winter he made his base at a new post, named for him, adjacent to Farm Island, in sec. 12, T. 111 N., R. 79 W., in present Hughes County, approximately one-quarter mile east of the city limits of Pierre (DeLand, 1902, map opp. p. 281). In this new area the trade was now reestablished, Fort Pierre II, one of the last of the true Indian-trade stations of the region, apparently being abandoned at this time (ibid., pp. 370–371). Wandel, whose recollections of the old post were reported by DeLand, and who assisted with the removal of 1863, stated that the "American Fur Company" (as the traders persisted in referring to the changing commercial firms) wished military protection but that this was refused by Sully unless the traders would remove to the vicinity of the military post; this was accordingly done, with the use of rafts and boats made of plank to carry coffee and sugar and "things we could lift," but left were "thousands of dollars' worth of things we couldn't lift."

Thus the known history of Fort Pierre II comes to a close. With removal to the neighborhood of Fort Sully, the traders doubtless assumed more the role of sutlers for the military, less that of Indian-traders. In 1866, the military themselves removed upriver, to establish a permanent military post, "New Fort Sully" (39SL45), in present Sully County. This post was, in the next decade, to become one of the finest on the river, and it was not abandoned until 1894, by which time the true Indian frontier had disappeared forever and the modern history of the region had begun, with permanent settlement.

DESCRIPTION OF THE SITE

Site 39ST217, the partial excavation of which is reported here, is located in lot 4, sec. 4 (fractional), T. 5 N., R. 31 E., B.H.M. This location differs from that given by Mattison (1954, p. 30) for the site of Fort Pierre II; legal data are, therefore, given below, in detail. This section (4) contains but four lots, and lies along the west bank of the Missouri River, in Stanley County, S. Dak., approximately 4 miles north of the city of Fort Pierre, the county seat (U.S. Corps of Engineers [maps of] Missouri River, Gavins Point near Yankton, S. Dak., to Stanton, N. Dak., 1947, sheet No. 68). The site in question is opposite and somewhat downstream from Snake Butte, a prominent landmark in Hughes County (pl. 23, aerial photograph by Corps of Engineers, U.S. Department of the Army).

Lot 4, referred to, is situated near the south "taking line" of segment A of the land reservation of Oahe Dam, now under construction, and was acquired by the Corps of Engineers prior to July 14, 1948, from the previous owner, Harold Breeden, together with parcels of land in adjacent sections to the west and south (U.S. Corps of Engineers, Oahe Dam, Real Estate, [map of] segment A, July 14, 1948). During the season of 1956, lot 4 was not under agricultural lease, but was in use, together with adjacent leased parcels, by Carl and Dale Wagner, father and son, of Fort Pierre and Pierre, respectively, owners of buildings situated on the lot in question formerly owned by Harold Breeden, together with the land.

Previous title to the parcel in question (lot 4) is recorded in public records preserved in the office of the Register of Deeds, Stanley County. Original entry of lands including the present parcel was made by Alltony [sic] Brignoli on October 22, 1892, at the Receiver's Office, Pierre (Stanley Co., Reg. of Deeds, Receiver's Receipts, vol. 8, p. 8). By a warranty deed made December 22, 1892, Brignoli sold and conveyed to May R. Miller lands including this parcel (Stanley Co., Reg. of Deeds, Deed Record, vol. 6, p. 134). Subsequently, on April 26, 1893, a United States patent (Sioux Indian Lands) was issued to Brignoli for these lands (ibid., vol. 6, p. 191). By a warranty deed of February 18, 1902, May Rooker Brown (formerly May R. Miller) and Harry Brown, her husband, granted, bargained, sold and conveyed lands including this parcel to Jane R. Breeden (Stanley Co., Reg. of Deeds, Warranty Deed Record, vol. 10, p. 496). Harold Breeden appears to have been the legal heir of Jane R. Breeden, but the title has not been further traced. It may be noted that Stanley County, created from former Sioux Indian Reservation lands, was first opened for legal settlement in 1890, some years after the abandonment of the trading post here discussed.

Official copies of original notes of General Land Office surveys of the former reservation, of 1890, covering the present parcel, are preserved in the South Dakota Department of School and Public Lands, at Pierre, and these contain historical data pertaining to the present site. As required by the General Land Office, field surveys (preserved in notebooks and plats of the surveyors) included, with actual instrument data for subdivision and meander lines of each unit, a general description of each. Here were recorded general comments on soils, vegetation, visible landmarks, and other topics of importance for Land Office purposes. In the general description of T. 5 N., R. 31 E., subscribed and sworn to on November 24, 1890, by Frederick W. Pettigrew and Frederick C. Flickinger, deputy surveyors, appears the following passage, of interest here:

> The remains of old Ft. Pierre can plainly be seen in sec. 16. J. W. Philips house now stands in the center of the old stockade. This fort was established as a trading post in 1855 [and] was afterwards abandoned and re-established in sec. 4 near the S.W. corner. In either case a trench marks the line of the old stockade, and heaps of earth the sites of former residences. (S.D. Dept.

of School and Public Lands, Ms. Field Notes of the Survey of Township 5 North of Range 31 East, of the Black Hills Meridian, South Dakota, vol. 203, pp. 437–438, 447).

This statement, containing information obtained in 1890, records the fact that in that year the former locations of Fort Pierre Chouteau, in sec. 16, and of Fort Pierre II, in sec. 4, were well known. The statement in question is, of course, hearsay evidence, inasmuch as visible remains of both earlier trade establishments had disappeared, except for "trenches" and "heaps of earth"—evidence probably commonly understood in the area at the time, and readily obtained by the surveyors. The obvious error in the date of establishment of old Fort Pierre—1855—is an understandable one, that year having been the date of acquisition of the former trading post as a military post. This detectable error in the sworn statement of 1890, far from throwing doubt upon the reliability of the statement as a whole, indirectly reveals the dependence of the surveyors upon hearsay evidence for portions of their record—local testimony concerning historic facts. Other portions of the statement, e.g., the references to the dwelling of the well-known J. W. ("Scotty") Philip, the trenches, and the heaps of earth are, of course, eyewitness data. (It may here be noted also that, as evidence, portions of the G.L.O. record are not essentially different from the historical statements of DeLand concerning the sites in question, statements also based in part upon hearsay evidence.)

In the absence of precise location data for these trading posts contemporary with their actual use—data scarcely to be hoped for in view of the fact that adequate topographic maps were lacking for this region prior to the opening of the former Sioux Indian Reservation and the Land Office surveys of 1890—the record of that year must be accepted as demonstrating beyond reasonable doubt the original location of the two sites of particular importance here—that of Fort Pierre Chouteau, and that of Fort Pierre II. In view of the use of the area near the mouth of the Bad River during the heyday of the fur-trade and Indian-trade by various firms and individuals, sometimes simultaneously in the same immediate region, the preservation of such specific and presumably impartial and unbiased records as these is a fortunate circumstance for historical purposes.

As shown on the Corps of Engineers maps cited above, site 39ST217 is situated approximately 1,000 feet west of the present channel of the Missouri River, at an elevation above sea level of approximately 1,430 feet. This point is on the bottom land or flood plain of the river, but the site is now screened in this section of the valley from a view of the channel by trees and underbrush. Immediately west of the site, at an additional distance of approximately 1,000 feet, the first terrace of the valley (locally known as the "first bench") rises some 20 feet higher, a notable topographic feature when viewed from the lower elevation of this site. Site 39ST16, known as the Breeden earth-lodge village, a prehistoric site investigated during the season of 1955 by the Missouri Basin Project, is located on this first terrace, somewhat to the north of west from site 39ST217, and well above flood levels. On this first terrace also is located the present access road leading to the Oahe Dam; this is a hard-surface highway connecting with U.S. Highway 14, west of Fort Pierre.

Located on the level flood plain, site 39ST217 had been under cultivation for many years when it was investigated during the season of 1956. The geologic character of the deposits at this point have been described by Crandell as "floodplain alluvium," consisting of "stream deposits of reworked glacial drift, Pierre shale detritus, and sand and gravel of nonglacial source" (Crandell, 1954). The surface of the plot in question was found to be supporting a thin cover of volunteer oats and weeds in 1956, and while not presenting clear evidence of structural features such as partially-filled stockade trenches, showed one slight depression some 20 feet in diameter (later found to be the site of a cellar), together with object materials that antedated modern agricultural use, such as fragments of common fired brick, bits of fired adobe-clay chinking, metal, glass, glazed earthenware fragments, and small glass beads (pl. 19, *a*).

It was known that river flooding, especially during the late winter and early summer seasons, had periodically affected the site in the past, and layers of silts from such sources were encountered upon excavation. At the Breeden-Wagner buildings mentioned (believed to have been the original homestead site of Brignoli) Carl Wagner pointed out accidental traces and one intentional record mark showing that in 1952 the area had been covered by flood waters to a depth of some 3 feet. The flood of that year, on the Missouri proper at this place, converging with another, on the lower Bad River, upon the city of Fort Pierre, forced its complete evacuation. Flooding at the present site was, of course, that of the Missouri proper.

Seasonal flooding of the vicinity of site 39ST217 had, without question, previously affected it on numerous occasions, but such natural events appear to have no visible effect upon the archeological remains to be described. Aggradation of the flood plain had certainly occurred, on the evidence of layers of sterile water-borne materials, but no evidence was seen in excavation of complimentary processes such as cutting into structural features. Long cultivation of the area, on the other hand, had had only relatively slight effect upon the structural remains, cultivation having penetrated to only a shallow depth—seldom exceeding 4 to 6 inches.

Reference has been made to the fact that the site is now screened from the Missouri. This timber and underbrush is, in large part, clearly of recent origin, possibly by extension of smaller areas referred to in older documents—i.e., has become reestablished or has expanded since the period of original use of the site. It is probable that when the site was in use, land lying between it and the river would have been cleared, as a security measure, as is suggested by the statement of Wandel, cited above (p. 95), to facilitate transshipment of goods by steamboat, and as a result of heavy demands by the trading post upon local resources for fuel and construction materials.

Changes such as these, in the character of the natural resources of the immediate area following the period of the trading post, may be inferred, prior to the agricultural use of these lands, beginning about the year 1892. The needs of a trading post, in fuel and construction materials, would materially have altered the timber cover of the immediate area, whereas soils and grasses would probably have been affected to only a slight extent, only in the immediate vicinity of the post, and only accidentally, rather than systematically. In the excavation data there are, for example, only slight hints of the use of horses or cattle, or of provisions for stabling them, from which one might infer the degree of use of grazing lands in the immediate neighborhood. Such animals were, of course, essential to the operation of such a post, but there are surprisingly few traces, in specimen materials recovered, to document the fact. Cultivation of the soil, furthermore, while no doubt practiced here during the period in question, may also have been of minor importance—perhaps little beyond small kitchen gardens, of which no evidence has been found.

ARCHEOLOGICAL EVIDENCE OBTAINED

Before proceeding to an account of new data obtained in excavation at Site 39ST217, it seems well to describe the methods employed in obtaining the data. Available historical documentation, maps, and aerial photographs had been studied with care before the immediate area was visited in May 1956. Two series of aerial mosaic photographs were used—that of the former Agricultural Adjustment Administration, U.S. Department of Agriculture, of 1938, and that of the Corps of Engineers, U.S. Army, of 1946. (Parts of the first series are in the files of the Missouri Basin Project; the later series was consulted in the Oahe Area Office, C.E. The latter series of photographs was the basis for the engraved maps of the Missouri River from Gavins Point, near Yankton, S. Dak., to Stanton, N. Dak., prepared by stereophotogrammetric methods in 1947. These engraved maps are also in the files of the Missouri Basin Project.)

Of these two series of aerial photographs, the former, made during the dry cycle of the 1930's, appeared to be the more helpful for present purposes. Examination of the sheet of the series covering this site (AAA–BOK–3/56–June 2, 1938) suggested that the site of Fort

Pierre lay in the immediate vicinity of the Breeden-Wagner buildings (which include the building believed to be the Brignoli claim shanty). The evidence considered to be of archeological importance comprised a large "enclosure" bounded by straight lines, approximately rectangular, and having what appeared to be smaller rectangular outlines contiguous to the larger "enclosures," which were interpreted as sites of former blockhouses. These surface features were believed to antedate the farm buildings (also visible on the photographs, and still standing in 1956), which they appeared to enclose. It was therefore supposed that these buildings had been built on the site of the abandoned trading post.

With initial exploratory trenching it soon became apparent that this belief was erroneous, and that the true site of the post actually lay somewhat north of, and quite separate from, the farm buildings. It seems probable that these farm buildings, beginning with the claim shanty, had for some reason been purposely located near the site of the former post. No evidence, however, is visible on the aerial photograph mentioned, of the actual site determined by excavation, and this can best be explained by reference to the prolonged cultivation of the area. By contrast, the sites of many native villages of the Oahe Reservoir area have been observed on such photographs despite cultivation, but the physical characteristics of those sites are notably different, and the present experience demonstrates the fact that all sites of archeological interest may not be visible on such photographs, even those taken under ideal conditions of ground cover, if the sites have been long cultivated.

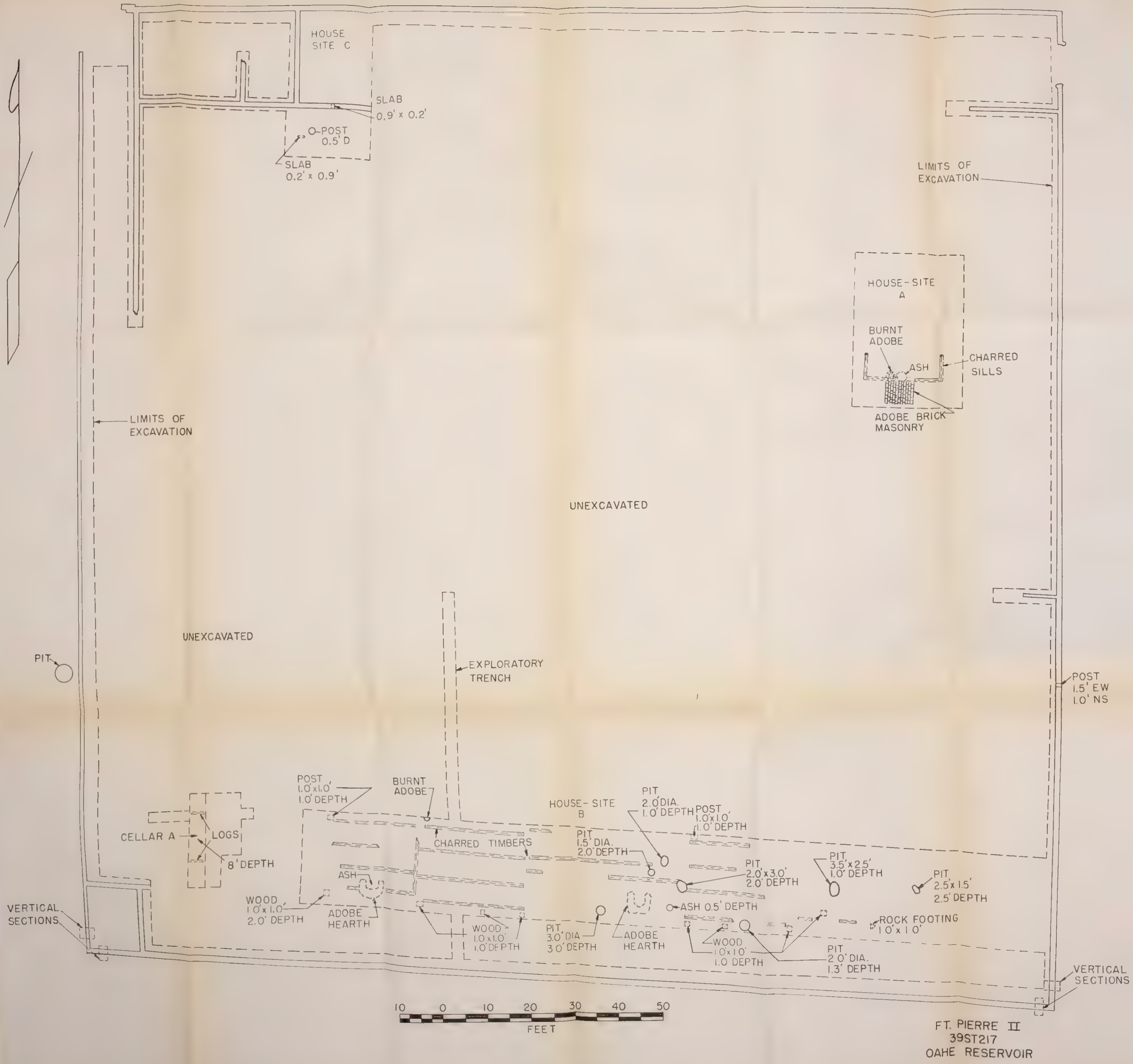
Excavations were initiated with an exploratory trench 3 feet in width and extending to the north, beginning approximately 50 feet north of a corral fence surrounding the farm buildings, in line with the west side of the corral, this side forming the front of the group, and facing the present highway. The accompanying plan of the excavated site shown in map 4, was subsequently made with alidade and plane table, distances being chained. This trench was carried to only a shallow depth (approximately 6 inches), since it produced only the scantiest cultural debris, much of which was of recent origin. When this trench had been extended northward for a distance of approximately 50 feet, structural features were first encountered in place, in the remains of a stockade trench having an alinement approximately at right angles to the exploratory trench, and containing burnt and decayed timber remains, fragments of burnt adobe clay, and other debris, the original trench averaging 2 feet in width and containing random earthfill with cultural materials.

When vertical and horizontal sections of this original stockade trench had been made and examined, tests approximately 5 feet square, and separated by balks approximately 6 inches wide, were opened east and west of the exploratory trench, without particular concern for compass orientation, but following the course of the stockade trench, sections of which had been exposed. In these test squares, further sections of the original stockade trench were made, and the tests were extended east and west until a change in the alinement of the original trench was observed, at a corner approximately 50 feet west of the exploratory trench. From this point northward, similar tests were then made, the test squares following the alinement of the west face of the original enclosure. It had now become clear that the site of the post lay north of the corral and farm buildings, and did not enclose them as had been supposed. Sections were then made of the north face of the enclosure, in a similar fashion, though no actual intersection of west and north faces was found.

Portions of the south, west, and north sides of the stockade having been located by sectioning, together with one clearly defined corner at the point of intersection of the west and south faces, a road patrol (blade) was obtained, with an experienced operator, to expose the outline of the whole enclosure in horizontal section. Work was begun with this motor equipment at a point near the presumed intersection of north and west stockade lines, though as has been noted no actual intersection of these lines had been found in hand excavations. During this time also, a portion of the northerly half of the entire enclosed area (that enclosed by the three sides known) was also bladed off, the earth being moved well to the east, to an area of slightly lower elevation, in the hope of locating further architectural remains or similar features (pl. 19, *b*). Only one such site (House-site A) was discovered in this process, and it is probable that prolonged cultivation of the entire site had destroyed other building remains elsewhere within the stockade area.

In the course of this mechanical work, the alinement of the stockade trench previously opened by hand excavation on the south, west, and north was also cleared once more by blading away the balks between preliminary test squares. When the east face of the stockade had also been exposed by blading (after the northeast and southeast angles of the original enclosure had been located by hand exploration), the original stockade trench was revealed in horizontal section in its entirety, and the true size of the former post became apparent (pl. 23).

The initial exploratory excavation trench, excavated by hand, was also continued approximately 150 feet northward from its starting point, and when extended into the interior of the enclosed area, exposed remains of the additional building (House-site B), in charred and decayed sills and random wood-fragments, fired adobe-clay chinking, and plentiful artifactual materials (pl. 22, *a*). In the course of


HOUSE SITE C
SLAB 0.9' x 0.2'
POST 0.5' D
SLAB 0.2' x 0.9'
LIMITS OF EXCAVATION
HOUSE-SITE A
BURNT ADOBE
ASH
CHARRED SILLS
ADOBE BRICK MASONRY
LIMITS OF EXCAVATION
UNEXCAVATED
UNEXCAVATED
PIT
EXPLORATORY TRENCH
POST 1.5' EW 1.0' NS
POST 1.0'x1.0' 1.0' DEPTH
BURNT ADOBE
HOUSE-SITE B
PIT 2.0' DIA. 1.0' DEPTH
POST 1.0'x1.0' 1.0' DEPTH
CELLAR A
LOGS
8' DEPTH
CHARRED TIMBERS
PIT 1.5' DIA. 2.0' DEPTH
PIT 2.0'x3.0' 2.0' DEPTH
PIT 3.5'x2.5' 1.0' DEPTH
PIT 2.5'x1.5' 2.5' DEPTH
ASH
WOOD 1.0'x1.0' 2.0' DEPTH
ADOBE HEARTH
ASH 0.5' DEPTH
ROCK FOOTING 1.0'x1.0'
VERTICAL SECTIONS
WOOD 1.0x1.0' 1.0' DEPTH
PIT 3.0' DIA 3.0' DEPTH
ADOBE HEARTH
WOOD 1.0'x1.0' 1.0 DEPTH
PIT 2.0' DIA. 1.3' DEPTH
VERTICAL SECTIONS
10 0 10 20 30 40 50
FEET
FT. PIERRE II
39ST217
OAHE RESERVOIR

Map 4. Fort Pierre II (39ST217), Oahe Reservoir

the blading of the north half of the entire enclosed area of the stockade, one other site was also designated as that of a building (House-site C); on further investigation by hand this identification was, however, modified as described below.

In addition to the horizontal section of the complete outline of the stockade, with a part of the interior area, obtained by means of the mechanical equipment supplemented by handwork, vertical sections were also obtained on faces cut by the forward edge of the blade of the equipment (the forward edge being kept toward the interior of the enclosure). These vertical faces were of relatively shallow height, seldom exceeding 1½ feet, but they revealed additional vertical sections of interior details of the original post such as certain offset trenches at right angles to the main stockade line, supplementing the horizontal sections.

The applicability of customary archeological field methods, with hand excavation, to the study of a site of White origin needs no discussion here, but comments may be made concerning the use of mechanical equipment such as a road patrol on such sites. In the examination of the site of a trading post, known from comparative data to have been constructed in large part of timber materials and evidencing little if any masonry to obstruct the use of such equipment, it seems desirable to obtain, early in the excavation, some notion of the full scale and plan of the whole, since such matters are of primary concern in the study of such establishments. In the present instance, the fact that overall dimensions of the whole proved to be greater than 200 feet reveals something of the intended role of the post in its period and, probably, something of historic change in the design of such establishments at this relatively late period of the Indian-trade. In this instance, the mechanical opening of large parts of the area also revealed that few architectural remains meriting detailed study survived within the enclosure, despite the relatively large size of the post. It would, of course, have been entirely feasible to obtain this information by hand methods, though many weeks of hand labor would have been required for the purpose, whereas the use of mechanical equipment occupied but a few hours, and at a more reasonable cost.

In order to use the mechanical equipment available (a blade) in a consistent, effective fashion, earth was bladed outward from the four sides of the stockade in the process of cutting horizontal sections of these lines. Since the depth reached by the inner vertical edge of the blade was appreciable, averaging 1½ feet below the level of the present (cultivated) surface, it was necessary to move the earth some distance outward from the vertical profile left by the edge of the blade. This was a distance of 15 to 20 feet, ordinarily, the resulting berm rising very gradually to a crest, outward. This cutting was, of necessity, deeper on the inner portion and, conversely, the spoil dirt beyond covered other deposits from view. Some data concerning the immediate exterior of the stockade were undoubtedly lost in this process. Only one uniformative shallow pit was encountered (probably no more than 1 foot in depth, originally) during this blading, along the west face, outside the stockade. Near the southeast angle of the enclosure, at a somewhat greater distance (but not shown on the accompanying plan), a modern deposit was encountered, consisting of a plank and post structure, fastened with wire nails, and disturbed by subsequent plowing, probably the remains of a corral fence of relatively recent date.

There are other practical considerations concerning the use of mechanical equipment in such investigations. It might be supposed that such extensive blading as that here accomplished would destroy much of the cultural remains sought. In the present instance, however, it was known from previous hand excavations that the soil at the surface of the site had been completely disturbed by cultivation, and that it was improbable that structural features would be found until this mantle had, by some means, been removed. There was, therefore, little objection to using such a piece, but rather a distinct advantage from the standpoint of salvaging as much information as possible in the shortest time. Elsewhere during the salvage program the use of such equipment had also been justified in the study of undisturbed sites.

Experience elsewhere with such mechanical equipment, a road patrol, in the study of a site of White origin (that of the site of the trading post of Fort Berthold I, a part of Site 32ML2, which had not been used for modern agriculture) also afforded ample original data of structural and achitectural features without, it is believed, material loss of evidence (Smith and Woolworth, MS.). At that site the equipment was also used to expose the alinement of the adjacent village stockade. The use of such a mechanical device has, needless to say, certain limitations. Such a device cannot be halted immediately upon the exposure of an artifact or feature of archeological significance; it provides, ordinarily, only horizontal soil sections and it must be used, at least at the start, in the manner of a plow, the leading edge depressed sufficiently to cut into deposits. Finally, a blade cannot carry earth away, but must roll or drag it, and this may on occasion prove objectionable, if unavoidable. In general, however, the present experience corroborates that gained elsewhere by others: mechanical equipment can, and sometimes should be, used, where available, in any salvage program.

ARCHITECTURAL EVIDENCE

Like most commercial establishments of the frontier, Fort Pierre II was built in the form of a hollow square, a large timber enclosure intended to provide security for goods and personnel of the post—

security from theft, raid, and petty annoyance caused by native visitors.

Unlike many other such posts, however, this stockade had been very simple in plan, and upon excavation little evidence was encountered that it had ever been provided with blockhouses, a familiar feature of many other posts. It is possible that by the year 1859 such facilities were deemed unnecessary in this area, in view of changing relationships between trader and Indian; it is also possible that blockhouses were not provided because of lack of funds or materials during the brief period of the use of the post, or because uncertainties of the trade at the time did not favor such elaboration of a basic plan. Whatever the reason for omitting the protection of blockhouses, which ordinarily were paired and offset, to permit flanking fire along adjacent sections of a stockade, this post does not seem to have been furnished with them, from evidence surviving at ground level. No documentary evidence on the point is known; the reference cited above (p. 105) to the "southeast bastion corner" may signify no more than the southeast corner of the entire stockade, and no evidence of any special structure such as a blockhouse was found at this place upon excavation.

Within the enclosing stockade, buildings appear to have been located near the perimeter, either connected with, or close to, the line of the stockade, as was frequently the case with such establishments. Only two definite building sites were encountered (House-sites A and B), and that of a cellar (A), which lacked evidence of having been provided with a superstructure. Extensive trial blading and close examination of the whole site, moreover, failed to reveal traces of other buildings within the stockade. Along the north stockade line, and connected with it, secondary trenches were encountered, which may mark the sites of minor structures (House-site C). Little had been preserved, however, to reveal their exact nature, and they may have been no more than minor sheds and corrals. On the basis of surviving evidence, and taking account of the probability that sites of certain buildings formerly in use here had been completely obliterated by cultivation of the entire area, it nevertheless seems probable that buildings of the post had always been few in number and that the central yard or compound had always been relatively open.

On excavation, the sides of the stockade enclosure were found to describe a somewhat irregular quadrilateral. The intent of the designers and builders probably was that the enclosure should be a rectangle, but no two sides were of identical length, or any corner a true right angle. Little is known of actual steps in the construction of any of the many trading posts of the Missouri valley, from accounts made at the time and on the spot, such as would be useful for comparative purposes. From evidence accumulating at excavated sites of a few such posts, however, it seems improbable that attention was paid by builders of the posts to laying out perfect geometric figures. It may be suspected that much of the planning and building was of the rule-of-thumb variety, and that most of the actual construction was accomplished by using the readiest, simplest means at hand.

The most notable feature of the enclosure formed by this stockade is its generous size. Approximate dimensions of the enclosure are as follows:

East side: 225 ft.
South side: 220 ft.
West side: 195 ft. (est.)
North side: 227 ft. (est.)

The latter estimates have been obtained by projection of the adjacent stockade lines to a point of intersection.

Such proportions are considerably greater than those of many trading posts of preceding years in the valley, and almost equal to those of Fort Pierre Chouteau, which is said to have measured 235 feet square (Harris, 1951, p. 83, cited by Mattison, 1954, p. 25), and Fort Union, which is said to have measured 220 by 240 feet (Audubon, 1897, vol. 2, p. 180, cited by Mattison, 1955, p. 66). The large size of Fort Pierre II suggests that when the post was built it was intended, despite the omission of blockhouses, to be a full replacement of the old post (Fort Pierre Chouteau), and not merely another secondary post.

The location of Fort Pierre II on the lowermost level of the valley, the flood plain itself, has been noted. The post was probably so located because of the fact that a reasonably large open space was available here, within a reasonable distance from the riverbank and landing facilities for steamboats. The fact that the low site would be subject to spring flooding may have caused little concern to the builders, despite previous experience, when such flooding had caused inconvenience to establishments nearer the mouth of Bad River. Convenience to the river-highway itself—a major consideration—and space surrounding, sufficiently open for reasonable security from unwelcome visitors, must have weighed most heavily in planning for the new post.

The orientation of the enclosure is of interest, in view of the fact that although compass orientation would not seem necessary, it was adhered to. No data are known proving the use of a compass in laying out the post, and it is possible that it was established by the easy expedient of setting the lines at night according to the position of the North Star. Elsewhere, posts seem to have been so oriented in order to permit dwellings to face southward (probably to take advantage of winter sunshine upon building fronts, away from prevailing winter winds), with utility buildings such as warehouses and storerooms facing them, on the opposite side of the enclosure. In the present case, one large building site (House-site B) appears to be that of a warehouse, facing north, but data are lacking on any former buildings opposite, facing south.

Instead of facing south, the smaller building site (House-site A)—probably that of a dwelling, traces of which were found near the east line of the stockade, adjacent to the northeast angle—appears to have faced in some other direction than southward. The front alinement of this building is not evident, but it is possible that the main entrance was on the north, opposite a fireplace and chimney on the south wall. If this was the case, immediate access to the adjacent stockade entrance would have been possible, and it would have been a means of keeping control over the use of this gate.

Fort Pierre II was built of native timber, particularly cottonwood, but few data are available from excavation on whether building timbers were ordinarily hewn and fitted (as might be expected, at this period) rather than roughly fitted, full-dimension logs. Whether sawmills, at such locations as Chantier Creek, upriver, were actually in use at this period is not known. No lumber fragments clearly showing saw marks were found, however, and it is probable that hewn timber was then ordinarily used for construction, except in the stockade itself. In the stockade, logs were probably peeled, to reduce fire hazards.

Such timbers were undoubtedly obtained from groves of trees in the vicinity of the post, and from those near the river, upstream, from which logs could readily be floated down to the site. It is also possible that timber materials used were in part salvage materials from the buildings and enclosure at Fort Pierre Chouteau, which was finally abandoned in 1857, after the removal of some useful building materials by the military themselves (cf. p. 94). No clear evidence of the reuse of materials from such an earlier post was, however, seen.

In view of the fact that by the year 1859 timber resources of the region were probably badly depleted through long exploitation for both construction and fuel, by both Indians and Whites, Fort Pierre II may have appeared to be less skillfully or carefully built than previous posts such as Fort Pierre Chouteau. It is unfortunate for comparative purposes that no contemporary picture of the present post seems to have survived. It is to be hoped that evidence of this sort and, indeed, further documentation of any kind, will be found. Some further data are preserved in the Chouteau Company and family papers now in the Missouri Historical Society, but it has not yet been possible to examine these papers.

Several unpublished manuscripts in these collections appear to bear directly upon the physical history of Fort Pierre II. The following selected items, information concerning which has kindly been supplied by Miss Barbara Kell, former reference librarian, may serve as illustrations:

(1) Inventory of "stock property" of the Upper Missouri Outfit at Fort Pierre, June 1, 1857. By this date, the military had abandoned Fort Pierre Chouteau, and the inventory presumably shows property repossessed by the Company, which had not yet been paid for by the Federal Government for the post; this property may have been moved to Fort Galpin, the temporary post referred to above (p. 93), used until the establishment of Fort Pierre II in 1859.

(2) Invoice of goods shipped to Fort Pierre by P. Chouteau, Jr., and Co., May 14, 1858. The invoice should reveal kinds of goods received at this point just prior to establishment of Fort Pierre II, for comparison with earlier and later invoices.

(3) Invoice of goods, etc., shipped to Fort Pierre [II] by P. Chouteau, Jr., and Co., May 23, 1859.

(4) Invoice of lumber, Fort Pierre [II] to P. Chouteau, Jr., and Co., July 27, 1859. Evidence of "export trade" from the post, downriver, perhaps to military posts such as Fort Randall, or to consignees at Sioux City, Iowa, and other river communities.

(5) Bill of lading and invoice of goods shipped to Galpin by P. Chouteau, Jr., and Co., Sept. 7, 1859.

(6) Invoice of merchandise furnished Fort Benton, by Fort Pierre, May 25, 1860. Evidence that Fort Pierre II continued, at least on occasion, the depot function of Fort Pierre Chouteau, supplying more distant posts.

(7) Insurance policies on merchandise shipped to Fort Pierre and other points, April 11, 1864. Evidence that even after the removal of Company interests from Fort Pierre II in 1863 the use of the name "Ft. Pierre" persisted; the record should be useful for comparison with data on shipments of previous date.

The stockade of Fort Pierre II had been formed of a single continuous row of logs or heavy timbers, closely set on end in a trench prepared to receive them, on the four sides of the enclosure, the ends of the posts having been held in place by earth, probably tamped in. No evidence was found that throws light on methods of tying timbers together above ground, or bracing them, in order to keep the posts in alinement. Various sections of the once-continuous line of posts were seen in excavation in exposed post butts in the prepared trench, and, where the post butts were lacking, the alinement of the trench was clearly marked in soil discoloration, without interruption except at two points, to be noted. These discolorations were not uniform in character. At some points, the undisturbed sandy subsoil was darker than the fill in the trench; elsewhere, the fill in the trench (sometimes containing bits of charcoal or ash) was darker than the undisturbed earth on either side (pls. 20, *b;* 21, *a*, *b*). Throughout the entire course of the stockade, as well as at sites of interior structures of the post, it was seen that fire was a major factor in destroying the original post. Whether this fire destruction was accidental or purposeful is unknown, or whether more than a single major fire was responsible.

In many sections of the original stockade trench, little or no wood remains, either decayed or charred, had been preserved. The timbers that had originally stood in these sections had probably been removed for use as fuel after the abandonment of the post. At some other points, timber remains still in place were associated with post pits that had been refilled with earth, and it is probable that these instances illustrate repair of the stockade, and replacement of original posts, decayed or damaged.

Vertical cross sections of the original stockade trench were made at points near the southwest and southeast angles of the post, and in these sections it was observed that the depth of the trench below the original (now-disturbed) surface probably nowhere exceeded 2 feet. It seems probable, therefore, that the height of the original stockade above the ground was no more than 8 to 10 feet at most, thus requiring logs 10 to 12 feet overall.

Two openings in the stockade lines of the post were encountered upon excavation, both openings having permitted access to the interior, and both, probably, ordinarily used as gates, though excavations provided no significant architectural detail from which the nature of the gate could be determined. The opening along the east stockade line near the northeast angle of the post, appears to have been the more important of the two, and not far removed from it was the site of the dwelling (House-site A). At this opening, somewhat larger timbers had stood on either side of the opening, and the area had apparently been screened from the interior by a short line of smaller posts at right angle. If, as might be supposed, this was the site of the main gate of the post, this angle of the post would have been a logical location for a blockhouse, but no evidence was found of any such architectural elaboration here.

The second opening in the stockade lines, near the northwest angle, was of different design, being formed by long parallel sections of stockade, also lacking significant architectural detail. The difference in plan of this entry from that of the other opening suggests that its use differed from that of the other, but the actual use is obscure. Near this angle, large quantities of nails and spikes were found, with some scrap metal, which suggests that a shop of some kind had once stood nearby, the structural remains of which had been lost.

At the southwest angle of the stockade, sections of trench, intersecting with the exterior lines and identical with them in containing post butts and timber fragments, and disturbed earth, enclosed a small area of the interior (pl. 20, *b*). This 4-sided figure, approximately 12 by 14 feet, suggests a blockhouse or tower. The sides of this small enclosure consisted of vertical timbers rather than horizontal logs, however, and such construction differs from that of blockhouses at many trading establishments. Furthermore, the four sides of this enclosed area formed a continuous closed line of posts, lacking any visible interruption, or obvious entry, leading to either the interior or exterior of the post. It is possible, of course, that evidence of such an opening had been destroyed. It is also possible that this small enclosure had originally supported a second story or platform, but if so the whole unit would have been unusual. If such a second level had once been used, it is also possible that the first level had not been furnished with any direct access, and had been a closed, dead space. Relatively few artifacts were recovered near this southwest angle of the stockade, and there is, therefore, little hint of the use of this area, as, for example, the site of a blockhouse.

Despite the lack of documentary or archeological evidence that Fort Pierre II had been provided with blockhouses, it should be repeated that evidence of such blockhouses may have been obliterated during cultivation. Elsewhere, at the site of Fort Berthold II (a part of site 32ML2, a site not disturbed by cultivation prior to excavation), little evidence of the former existence of its two blockhouses was found on excavation, though photographic and other pictorial record was available of their former existence (Smith, MS.). In that instance, the blockhouses had been built of hewn and fitted horizontal timbers, apparently set directly upon the surface of the ground without footings, but no physical evidence of them had remained in place.

It is worthy of note that for "Ft. Galpin," apparently used 1857–59, the statement was made (as noted on p. 93) that the post was similar to Fort Pierre Chouteau except that it lacked "bastions" (i.e., blockhouses). The description of "Ft. Galpin" as having been only partially stockaded suggests that the establishment may never have been completed, or blockhouses added during its short existence. Whatever the actual reasons for omitting such defensive features at the later post, their absence is a hint of important changes that were occurring in the trading posts at this period.

The site of a dwelling (House-site A) was first observed during trial blading of the north part of the interior of the present site, in the remains of an incomplete platform of unfired adobe-clay bricks, regularly laid, probably in adobe mortar (pl. 20, *a*). Associated with this structure, probably a chimney base, were a small ash pit and loose adobe bricks and fragments, which had been accidentally fired on one or more surfaces, together with a few loose kiln-fired red brick and brick fragments. This ash pit was not a true hearth pit, in which fire had been laid directly, and lacked extensive scorching such as would have resulted from such use. It appeared rather to be an ash accumulation from a chimney, associated with random adobe brick tumbled from the chimney, which had previously been accidentally and indirectly fired by the heat of a stove used with the chimney or subsequently, upon destruction of the building by fire.

The incomplete adobe-brick-paved platform lay outside the building lines, which were marked throughout a part of their extent, contiguous with the platform, by charred fragments of timber sills, from which accurate measurements could not be obtained. These architectural details marked the alinement of the south elevation, and the east and west corners of a small building approximately 18 feet wide, overall, undoubtedly of timber. No further architectural detail was obtainable, the northerly portion of the structure having been completely destroyed, probably during cultivation, leaving only the scantiest scattered debris. Even charcoal bits and ash were sparse in this area. There were, however, hard-packed areas, probably remnants of the original earth floor of the building, within the area partly outlined by the sills, and some of these packed areas were slightly scorched and reddened.

The building that had stood here had been destroyed by fire, and the very sills of the building had been burnt. That the adobe-brick platform, immediately beyond the wall, was not accidentally fired in the process may be explained by supposing that it was protected from the fire by other material from a collapsed chimney, subsequently removed by cultivation. The few kiln-fired red brick found, undoubtedly brought to the site by steamboat, had probably been used in this chimney as well. The adobe bricks of the platform were not sufficiently well preserved to permit isolating complete individual specimens. The bricks measured 5 to 6 inches in width, and approximately 1 foot in length, and appeared to be approximately 3 to 4 inches in thickness. They showed no evidence of having been made with a binder such as straw, and had probably been specially made for use in the chimney base.

The building in question (House-site A) has been referred to as a dwelling. This conclusion seems inescapable in view of the small size of the original, the fact that it had been provided with a rather substantial chimney (apparently used with a stove), and that it had had only earth floors. In the disturbed fill covering this building site, some few further clues to original construction were obtained upon excavation, including three fragments of lime plaster (perhaps from upper portions of the chimney), a quantity of small fragments of window glass (some of which were scorched or melted, probably during the burning of the building), numerous nails, and some minor building hardware.

Other specimens obtained here illustrate original furnishings and reveal the essentially domestic character of the building. Among these are the blade of a spade, a fragment of cast-iron stove, numerous sherds and broken objects of stoneware and white and colored earthenware, a table fork with wooden handle (fragmentary), fragments of glass tumblers, a group of animal and bird bones (probably food refuse), and small personal possessions that support the identification of the building as a dwelling. Among the latter is a group of seven identical large hand-decorated glass beads, probably part of an ornamental strand once the property of a woman of the household. These beads were found scattered over the floor area of the dwelling, but had obviously once been used together.

A more imposing, though also badly denuded, building site (House-site B) was encountered along the south side of the stockade, probably the site of a warehouse or trading building rather than primarily a dwelling (pl. 22, *a*). This site was first observed during initial excavations at a point at which the building site was crossed by the north-south exploratory trench. The excavation of this building site was accomplished entirely by handwork.

The most noteworthy details of this building site were parallel rows of charred horizontal timbers and timber fragments, the remains of sills and joists of the original, though the spacing was not entirely uniform. Although in general badly preserved, these timbers appeared to have been hewn, and probably originally measured 4 by 4 and 6 by 6 inches. Associated with the horizontal timbers were numerous bits of accidentally fired adobe-clay chinking, and remains of burnt and unburnt adobe bricks. Fragmentary post butts and filled postholes were also found, containing remains of posts that had been set in small pits, ordinarily 1 foot square and 1 foot deep, and probably dug with spades. The blade of one such spade, too badly corroded to preserve, was found on the original ground level near the west end of this building site. One minor architectural detail encountered was a small group of stones, which had served as a footing for a sill or joist, also approximately 1 foot square. Despite the number of sills and posts used in the building, no divisions of the whole such as room areas could be defined. Nor was there evidence to show whether the timberwork was end-notched or included vertical posts (as is suggested by the presence of the post butts) into which horizontal hewn logs were tenoned. Elsewhere, the latter distinctive style of logwork was employed in the construction of posts of this period (e.g., Fort Berthold II, a part of site 32ML2). The surviving post butts here may actually be nothing more than separate footings for end-notched horizontal timbers, rather than true corner posts.

Another noteworthy architectural detail of this building was the provision of small fireplaces, the remains of two of which were found (pl. 22, *b*). These were made of puddled adobe clay, probably reinforced with twigs and sticks, and provided with small hearth areas, in which ash and charcoal bits were found. No clue to the original design of upper parts of fireplaces or chimneys was seen, but these were probably of the simplest character. No suggestion was found of the use of adobe bricks in direct association with these fireplaces.

The remnants of floor sills and joists found here reveal that this building had originally been furnished with a flooring of planks or puncheons, but no remnants of such flooring were found, and it may have been destroyed by the fire that destroyed the building, or subsequently removed for use as fuel. In addition to evidence of the fact that the building had been floored, several small subfloor pits were found on excavation. These pits may have been in use prior to the construction of the flooring (which may itself have been introduced after the completion of the exterior), and the pits may not have been accessible after the flooring was provided. These small shallow pits, which varied in diameter from 1½ to 3½ feet, and in depth from 1 to 3 feet, were uninformative, some being void of specimen material, others containing only random bits of construction or household debris. They did not appear to have been made specifically for storage or refuse pits, and their use is obscure.

The excavation of this building site produced larger quantities of small specimens, derived from both construction and use of the structure, than were obtained from the dwelling site (House-site A). Quantities of nails were found, of various sizes (though lacking large spikes), fragments of window glass, some scorched and melted and some undamaged, two plaster fragments, and numerous bits of adobe-clay chinking, originally used between wall timbers), some of which had been partially fused by the action of fire. Relatively few of the objects obtained were derived from ordinary household debris, though a quantity of sherds of glazed earthenware was found, with fragments of various glass bottles (one of them the seal of a wine bottle) and a quantity of food-refuse bones. Personal possessions and trade goods were present in some numbers, including fragments of firearms, gun flints, cartridge cases, a jackknife, clay-pipe fragments, small glass beads, and garment buttons of various kinds (including a few military buttons, which may be derived from the use of the site by military personnel, or from the use of surplus military garments by Indians). Unusual objects found include the foot of a china doll and two U.S. silver coins, a quarter of a dollar and a dime, both bearing the mint date 1857, such as would have been in general circulation during the years in which Fort Pierre II was used.

Objects of special interest from this site are some probably derived from visits to the building of Indian customers, during trading sessions. They include a group of cut antler-tine objects (similar to those used by many native peoples for pressure-flaking of stone), several incomplete catlinite tobacco pipes, and small rounded gaming pieces made of glazed earthenware. A pear-shaped catlinite object and a catlinite ball are perhaps souvenir “pocket pieces” of White traders and visitors.

Although undue weight should not be put upon evidence of the composition of the specimens from this building site, these specimens do not, in general, suggest actual occupation of the building as a dwelling as much as its use in the trade, probably as a combination storage and sales building. It is scarcely surprising that larger objects such as would have been needed in such a trade building were missing upon excavation, since valuable tools and furnishings of that nature would hardly have been abandoned with the discontinuance of trading here. The cultivation of the site after abandonment also helps to explain the removal of larger objects, such as might obstruct agricultural operations.

The location within the stockade of this building, and its size, character, and associated specimens, also suggest that the building was not primarily a dwelling. It had, beyond question, originally been divided into rooms (though no clear evidence of their precise dimensions was found), and some of these may from time to time have been used for living purposes. If, as in 1860 appears to have been the case, as many as 17 persons sometimes resided at this post, some of these may occasionally have dwelt here. The lack of evidence of any other building sufficiently large enough to accommodate stored goods and provide for trading operations, however, is noteworthy.

Little information was obtained from the area excavated adjacent to the northwest angle of the stockade, which was at first believed to be the site of a building (House-site C), data such as might have established the use of the immediate area. Structural data at this point comprised only incomplete sections of refilled trenches lacking timber remains, connected with the main stockade trenches, and one large post butt and random wood fragments. Specimens from this area were likewise few in number and uninformative. They include a quantity of nails, window-glass fragments, some domestic debris, and a few personal objects. It is probable that long cultivation here, as at other points within the whole site, had destroyed most of the structural data sought, and that such specimens as were obtained had been much displaced by cultivation.

The site of one other structure (cellar A) was partially investigated by hand excavation. This was the site of an earth-walled cellar, which was sectioned after part of the disturbed surface materials had been removed to expose the outline of the pit. Prior to excavation, this site had been pointed out by Miss Marjorie Breeden (now of Compton, Calif.), whose parents had formerly owned this property. Miss Breeden recalled that she and others had frequently found small relics in this general area in the past, including a gun fragment at one time owned by Mr. Harold Breeden, a brother.

When the surface soil had been removed, it was seen that the original cellar pit had been almost entirely refilled, largely with random earth, and very nearly leveled during cultivation, leaving only a slight depression. The borders of the pit were somewhat vague and ill defined, doubtless as a result of the slumping of the walls while the pit was still open, and of differential rates of settling after the pit had been filled with loose earth. In order to obtain information on the original pit, the area was sectioned by a north-south trench approximately 3 feet in width and carried to the floor level of the original pit, approximately 8 feet below the present surface, approximately the depth of the cellar during use.

This section revealed that the north-south dimension of the cellar had also been approximately 8 feet, and the east-west dimension may have been equal, from the outline of the pit visible in horizontal section. The pit appeared to have originally had vertical walls (subsequently somewhat damaged by earth-movements), and at the base of the north and south walls were two or more heavy timbers, to retain the walls and retard earth slumping. These timbers, though heavy, were too greatly decayed to permit accurate measurement, but they appeared to have been not less than 6 inches in diameter, or 6 by 6 inches. The floor of the cellar was marked only by the undisturbed subsoil.

The random fill encountered in opening the cellar section revealed little to illustrate the original use of the pit, most of the fill having been intentionally introduced subsequently, during attempts to obliterate it, probably during the period beginning in 1892 with the homestead settlement nearby. Some of the objects encountered in this fill, probably deposited here after the abandonment of Fort Pierre II, in 1863, certainly pertain to a later period, while a few seem to have been derived from the use of the area at the earlier date, by redeposit through earth moving and cultivation. Of the older objects, several suggest the presence of Indians at the trading post—e.g., a rimsherd of native pottery (one of only eight sherds from the entire site), a fragment of catlinite pipe, and three small human skull fragments. Of the remainder of the objects found in the cellar, some appear to pertain to the period of the trade (i.e., ca. 1859–63), while others seem to be derived from the later farm period—e.g., clinker fragments, bits of plate glass, parts of the metal frame of a buggy top, and the articulated skeleton of a young horse. In view of the fact that the fill revealed little of the original uses of the cellar, during the period of the trade, the trial section was not extended.

No suggestion was seen of the use of any superstructure with this cellar, probably because of cultivation prior to excavation. It is clear, however, that the cellar had been of some importance for storage, since no other large pit was found at the site. Since the pit was located near a building believed to have been itself primarily for storage and trade, it is possible that the pit had once held goods of the trade rather than foodstuffs, but certainty on this point is not now attainable.

In view of the presence of military groups in this region at various times after 1855, the question naturally arises whether Fort Pierre II, a trading post, may in any way have been altered or modified by them. Soldier labor would have been available at any time after the occupation of Fort Pierre Chouteau by the Army in the summer of that year, and plentifully with the summer of 1863 and the arrival of Sully's campaign forces. As has been noted, it is improbable that the present post was established until the year 1859, and by 1863 trading activities had been moved from this area downstream to the site of the first Fort Sully. Military construction or alteration of existing trading posts may have been accomplished at certain points in the area, as is suggested by the scanty records of this brief 4-year period, but no specific mention has been found of the employment of soldiers on the present post, or of the quartering of soldiers here, which aids in the study of its construction and use.

There is, on the other hand, evidence to suggest that the post was wholly the work of others than military personnel. At one point along the west stockade line, two ax blades were found in the original fill of the stockade trench, one a single-bit woodsman's ax lacking distinctive features, the other a half ax of the variety frequently called a squaw ax, ordinarily employed by Indian women in gathering fuel and of little use for other purposes. Numerous small glass beads were also obtained from the fill of the stockade trench at various points along its entire course, whereas no military objects were found in the excavation of the trench. The few objects of ultimate military origin found elsewhere, particularly at House-site B, furthermore, do not support the notion of actual residence of troops here. It is probable, therefore, that the original construction of buildings and stockade was accomplished in part with native labor (perhaps Indian women), and probably about the year 1859 rather than subsequently. The use of native labor would have been in keeping with the character of trading operations; White labor was ordinarily at a premium on the frontier, and the traders frequently employed native labor when and where available.

The possibility of the use of the post by the military, after its completion, is not, however, to be disregarded in the study of the site of Fort Pierre II, despite lack of documentation or physical evidence of such use. In the fall of 1856, Galpin, as representative of the Chouteau firm, was officially notified of an opportunity of applying for the position of sutler for the troops at Fort Pierre Chouteau, then numbering 175 men (Capt. C. S. Lovell, Fort Pierre [Chouteau], to Galpin, Oct. 30, 1856; in Chouteau Collections, Mo. Hist. Soc.; information courtesy of Miss Barbara Kell, Oct. 19, 1956). Whether Galpin was actually appointed at that time is not known. He did, however, submit requisitions for goods needed "for trade and soldiers" some months afterward (Galpin to P. Chouteau, Jr., and Co., Fort Pierre, Mar. 20, 1857). It is probable that the Chouteau firm did serve as sutlers thereafter. The intimate dependence of military personnel, and the War Department itself, upon the trading firms is hinted at in such records. Galpin and other Chouteau agents in the vicinity probably provided sutler services until Fort Pierre Chouteau was abandoned by the Army in the spring of 1857 and subsequently, during the Sully campaign of 1863, prior to the removal of Company interests to the first Fort Sully. No pertinent data for the intervening period are, however, known, though these would doubtless provide further light on Fort Pierre II, if they should be found, as in the National Archives.

Data such as these, of the relation of the traders to the military, illustrate the varied role played by successive trading posts in the area, beyond the primary function of supplying the Indian. They also suggest how military influences upon Fort Pierre II could be explained, without resort to inferring actual military occupation of the post, which is not supported by known records and is, indeed, improbable. Specifically, the presence among the specimens obtained from the site of regulation military items such as uniform buttons, fragments of ordnance and other equipment, may be readily explained by visits of commissioned and enlisted personnel here, and the probability that the post served as canteen, at various times between 1859 and 1863.

No evidence has been seen, in short, that tends to cast serious doubt on the identification of the site excavated as that of a trading post, specifically Fort Pierre II, used 1859–63. While it is true that no contemporary documentation now known conclusively links this site with that trading post, the archeological evidence, comprising physical remains of various kinds, cannot be accommodated to an establishment of any other kind, such as a military post. Nor are there hints, in known contemporary records, of other trading establishments to which the present physical data can be fitted.

The precise identity of the site excavated would scarcely call for discussion except for the fact that there had been several commercial posts in the general vicinity prior to 1859, and at least two in the immediate neighborhood, on the evidence of scanty contemporary and traditional record. (It should be noted that all of these posts were commercial in origin, and true trading posts, though the influence upon them of the military occupation after 1855 must be taken into account where its effects can ultimately be observed; such will unquestionably be the case at the site of Fort Pierre Chouteau, when that site is excavated.) Traditional evidence, however, is seldom conclusive for historical purposes, and does not constitute true primary evidence. The present problem is, therefore, that of identifying this site from scanty records of various kinds, to which the material evidences from excavation must be added—the latter, like contemporary records, constituting true (if limited) primary evidence. Further archival research, fortunately, offers hope of better knowledge of the physical history of Fort Pierre II, as well as of its general historic role.

ARTIFACTUAL EVIDENCE

The following descriptions of selected objects obtained in excavations at the site of Fort Pierre II (39ST217) complement the numerical specimen catalog of all objects collected there, prepared at the Project laboratory. These descriptions have here been grouped in logical classes and subclasses, according to the normal or most usual use of the objects or materials, or with respect to the human activity they best illustrate. The groupings are not, of course, mutually exclusive, and some cross references have been provided where they might facilitate study. No attempt has been made to provide an exhaustive account of each class of objects represented, or to describe or annotate each object or fragment preserved. The descriptive matter is intended for study in connection with materials from other sites, as well as for planning future exhibit use of the specimens.

The entries below provide specimen catalog numbers, identification and description of object, material of which it is composed, state of preservation, shape or design, size or dimensions (where possible), decoration and marks, notes on comparable specimens, and general historical notes. Measurements are usually given in English, inasmuch as this system was that employed by manufacturers of most of these objects, the products of factory and industrial processes. In the case of objects of native significance, those of small size, such as glass beads, and a few special items, measurements are, however, given in the metric system.

CONSTRUCTION MATERIALS AND BUILDING HARDWARE; FUEL

Hardwood.—No. 793: Sawed fragment (flooring?); width ca. 2 inches; thickness ca. ¾ inch; partially burnt. Nos. 619, 1185: Other fragments, some of which appear to be hardwoods. Limited quantities of finishing lumber were doubtless obtained by steamboat, from St. Louis and other downriver points.

Chinking, clay.— Nos. 12, 219, 503, 548, 617, 682, 751, 794, 1190, 1274: Numerous fragments, normally a dull gray, though some are accidentally fired and have a buff or reddish color as a result. Several (e.g., Nos. 794, 1190) preserve impressions of the logs or heavy timbers with which the chinking was used.

Bricks, adobe.—Nos. 839–845: Fragments of seven specimens, probably molded; none completely measurable, but apparently 5 to 6 inches in width, ca. 12 inches in length and ca. 3 to 4 inches in thickness (i.e., smaller than sizes customary in the American Southwest). Though originally only sun dried, some of the specimens exhibit traces of accidental firing on one or more surfaces, during use in masonry. No evidence is to be seen that these bricks were made with a binder such as straw. The masonry from which they were obtained had been laid up with adobe-clay mortar. The use of adobes in the Missouri basin is also known from archeological investigations at the site of Fort Stevenson, N. Dak., and elsewhere, during the 19th century (Smith, 1960).

Bricks, kiln-fired.—Eleven measurable specimens and numerous fragments. Nos. 221, 838, 1186, 1188: Four common red bricks, length 8¼ to 8⅜ inches; width 3¾ to 4⅛ inches; thickness 2 to 2¼ inches, the variations merely the result of irregular firing. Nos. 13, 222–225, 837, 1187, 1228: Eight slightly larger, superior bricks, buff to red in color, with coarse, gravelly temper, somewhat friable; length 8¼ to 8½ inches; width 4 to 4¼ inches; thickness 2½ to 2⅝ inches; although none of these specimens are marked, they resemble fired bricks found at the site of Fort Stevenson, which are known to have been manufactured by the St. Louis firm of Evens and Howard, established in 1857 (Smith, 1960). By the year 1859 there were, of course, other downriver communities from which brick could have been obtained by steamboat.

Mortar, lime.—Nos. 217, 218, 1184, 1229: Small fragments, flat, from joints in brick masonry; some of these have a fine sandy texture, and are very hard. It is worthy of note that no fragments of finish lime-plaster were obtained at this site.

Spikes and nails.—Numerous lots, including several thousands of specimens, of which some appear to be handwrought, though the vast majority are clearly machine cut. Examples (only) of the former are: Nos. 551, 652, 876; one unique large specimen (No. 332) (pl. 24, *h*), has a length of 10¼ inches; another (No. 936) (pl. 24, *g*), has a length of 5½ inches. Examples of the machine-cut nails are: (No. 749) 20-penny; (No. 649) 12-penny; (No. 651) 10-penny; (Nos. 552, 648) 8-penny; and (No. 647) 6-penny sizes. A few finish nails (Nos. 645, 646) are present, 2 and 3 inches in length.

Pintles, door.—No. 514: Wrought iron, length ca. 9 inches, height ca. 2½ inches; No. 943: Length 8½ inches (pl. 24, *a*). Similar specimens have been obtained from the site of Fort Berthold II (Smith, MS.).

Hinges, door.—No. 293: Portion only, probably locally wrought iron, with loop for insertion of pintle, and holes for nailing; length 8½ inches. No. 687: Portion of tapered specimen, with holes for wood screws; length 5½ inches. No. 628: "Butterfly" style, of cast brass, with 6 holes for screws; length 3 inches; width (open) 2 inches, with engraved letters, inscript: "F. & C. Clark" on obverse, and obscure lettering on reverse (pl. 24, *f*). A similar specimen of butterfly hinge (No. 964), incomplete, of iron, retains 2 small wood screws. A leaf of one similar specimen (No. 995) has a length of 2⅝ inches. Fifteen leaves of similar specimens (Nos. 114, 423, 774–776, 911, 965–971, 1207, 1242) measure 2¼ inches in width, and were of equal breadth when open. One leaf (No. 108), of a similar style, square, measures 2 inches in length, having 2 holes only. No. 346: Portion of one leaf of an H-hinge, of iron; original height ca. 3 inches, width (open) ca. 4 inches, having 3 holes in each leaf (pl. 24, *e*).

Screws, wood.—Nos. 81, 435, 437, 781, 925: Nine specimens, ranging in length from ⅞ of an inch to ca. 2 inches; others are preserved with hinges described above.

Hook, door.—No. 317: Handwrought iron (portion only, with eye-rivet); length ca. 5 inches (pl. 24, *b*).

Handle, door.—No. 956: Thumb-latch only, of wrought iron; length ca. 5½ inches (pl. 24, *c*). A very similar latch, complete with its handle, of slightly smaller size, was obtained at the site of Fort Berthold II (Smith, MS.).

Knobs, door.—Nos. 18, 465: Fragments of two molded brown ceramic knobs ("marbled"), having a recess in the reverse for the insertion of a metal spindle; diameters 2⅛ inches and 2¼ inches; the latter is fire damaged, but neither was found in direct association with a building site.

Striker, door lock.—No. 988: Machine-forged cast-iron; length 3¾ inches, with two holes for screws (pl. 24, *d*).

Glass, window.—Nos. 24, 470, 497, 546, 592, 624, 820, 1173, 1222, 1269, and other lots: Numerous lots, totaling several hundred small fragments, some fire damaged; predominantly a thin gage, ca. 1/16 of an inch in thickness. Two small sherds (Nos. 466, 467) are lightly etched with floral designs, of a style formerly often used in doors having a glass panel.

Coal, mineral.—No. 1273: Fragments of lignite (?). Fist-sized clinkers from mineral coal (lignite?) are also present (Nos. 220, 657, 795, 1182); one of these resembles natural "scoria" of the upper Missouri region.

TOOLS AND IMPLEMENTS

Chains (log or wagon).—No. 310: Hook only, wrought iron, height ca. 5 inches; breadth ca. 3 inches; worn out in use (pl. 24, *o*). No. 432: Section only, probably from a trace, having one large flat link, 2 twisted links, and a ring; total length ca. 7 inches (pl. 24, *s*). Nos. 108, 431, 908, 972, 973: Other links, of smaller sizes.

Spades.—Nos. 327, 787: Portions of 2 blades, steel, lengths not measurable; widths 6¾ inches and 7¼ inches. The latter (No. 787) was excavated immediately west of House-site A (dwelling). Two other specimens of spade blades (not preserved) were excavated just west of the probable west wall line of House-site B (warehouse).

Axes, single bit.—No. 640: Height 7 inches; maximum width of blade 4¾ inches; weight approximately 4 pounds; slight damage to edge during use (pl. 24, *p*). Found in the original trench fill, along the west stockade line, together with the half-ax described elsewhere (p. 141). No. 295: height 6½ inches, maximum width of blade ca. 4½ inches; weight 2 pounds, 10 ounces; slight damage to edge of blade, and forward edge of eye, during use. Probably locally forged.

File, carpenter's.—No. 996: Portion of a flat file, with shank, width ca. 1 inch; fire damaged,; from House-site B (warehouse).

Chisel or wedge.—No. 315: Handwrought from a steel file (machine made), showing evidence of use; length 5 inches (pl. 24, *r*).

Punch, carpenter's.—No. 363: Steel, shank rectangular in section, drawn to a chisel end; length 3¾ inches; width of working end ¼ of an inch only (pl. 24, *q*).

Wire.—Nos. 95, 388, 486, 536, 575, 669, 932, 1254, 1255: Fragments of plain iron or steel wire, of various gages. Nos. 576, 635, 667, 1253, 1256: Five fragments of barbed fence wire; two are single strand with single pairs of barbs, one (No. 1253) has double pairs of barbs.

HARNESS AND FARRIERY; WAGON PARTS

Ox shoe.—No. 117; Unique specimen (used in pairs), iron, with four shoenails; height ca. 3½ inches (pl. 24, *k*); approximate width of a pair of this size, in use, 4½ inches. Has small cleats (worn) at upper and lower margins.

Horseshoes.—Nos. 299, 303, 304, 305, 306, 696, 977: Seven complete or fragmentary shoes, with and without cleats. One (No. 306) is for use on a heavy draft animal; length ca. 7 inches; width ca. 6¾ inches. Another (No. 304), much worn, is of a size suitable for a pony; length ca. 4¼ inches; width ca. 4½ inches.

Buckles, harness.—No. 100: Steel, width 1¼ inches. No. 595: Steel, for smaller strap, width ⅞ of an inch. No. 1023: Cast brass, width 2 inches (pl. 24, *l*). No. 1237: Cast brass, width 1 inch. The latter two lack a tongue.

Hinge, strap.—No. 197: Sheet brass, die-stamped with floral decoration, width 1½ inches (pl. 24, *m*); probably for use with leather harness straps, to which it was fastened with small iron rivets.

Axle, wagon.—No. 307: Portion of cast iron shaft only, length 10½ inches; maximum diameter ca. 2 inches.

Axle-housings, wagon.—Nos. 641, 642, 643: Wrought iron; interior diameters 5½ inches, 5⅞ inches, and 6 inches; widths of bands ca. 1½ inches; thickness of metal ca. ⅜ of an inch; all from heavy wagons such as mule-drawn Army wagons.

Linchpin.—No. 323: Portion of one arm (curved) only; length ca. 2 inches (pl. 24, *j*). Perhaps a part of a patented variety of pin. Has small eye at one end, a small loop at the opposite end, upon which the arm revolved. The linchpin was passed through the axle of some wagons, to keep the wheel in place.

Clevises.—No. 326: Steel, length 9 inches; width 4½ inches. Nos. 319, 322, 936: Similar specimens, of smaller size (pl. 24, *i*); the last has rotating arms for attachment to wood, and may be from a buggy shaft.

Wagon bolts.—No. 1244: Square head; threaded shank, length 4¾ inches (pl. 24, *n*). No. 1004: Flat head; threaded shank, length 5 inches. No. 354: Flat head; threaded shank, retains nut; length 4½ inches. No. 956: Rounded head; threaded shank, length 3¾ inches.

Wagon parts (miscellaneous).—Numerous iron fragments, largely wrought iron, and some probably of local fabrication; many are obviously wagon fittings, but complete description is not attempted here. These pieces appear to pertain to both the period of the Indian trade at Fort Pierre II and that of the agricultural period that followed.

Wheel, balance.—No. 328: Portion only, cast steel; probably from an agricultural machine such as a threshing machine; diameter 3½ inches; thickness 1¼ inches.

Mower blades.—Nos. 300, 301, 302, 512, 934, 935: Six specimens, some showing evidence of use; width 3 inches. These obviously pertain to the agricultural period at this site.

Buggy-top.—Nos. 1249–1251: Three fragments of steel stays only, having brass ornaments and lock plates.

FURNITURE AND HOUSEHOLD ARTICLES

Stoves, cooking.—Numerous small parts (incomplete), of cast iron. Nos. 270, 271, 278, 284: Fragments of round lids, diameters ca. 7½ inches. Nos. 272, 274: Fragments of lid of slightly different design. Nos. 347, 425, 1003: Fragments of curved dividers, used to support lids. Nos. 275, 979: Fragments of unidentified parts of stoves. Lumps of mineral coal, also obtained, are referred to above (p. 132).

Stove pipe.—No. 572: Flattened section, sheet iron, with crimped interior seam; original diameter ca. 3 inches.

Cabinet (chest of drawers).—No. 782: Handle only, steel, die-stamped, length 3½ inches. No. 1162: Small brown ceramic knob, with recess for metal spindle; height ½ of an inch; diameter ¾ of an inch. No. 579: Hinged fastener, for cabinet or box, cast brass, length ca. 2¾ inches, width ca. 1 inch (pl. 25, *a*).

Candlestick.—No. 789: Center column only, sheet brass, with a portion of the iron base; the column was provided with a slot for the candle-ejector (missing), and has simple decoration, parallel engraved lines, in sets of three; approximate height of entire object ca. 4 inches (pl. 25, *b*). From House-site A (dwelling).

Bibcock (*spigot*).—No. 1052: Brass (lacking handle or key); length 5½ inches; of a kind formerly used with a wooden keg or barrel; interior diameter of spout 5/16 of an inch (pl. 25, *d*).

Kettle.—No. 786: Large rim sherd of cast-iron kettle (greatest dimension ca. 9 inches); height of original vessel ca. 9 inches; maximum diameter ca. 10 inches, probably provided with legs. Several smaller fragments, spherical or curved, are also present, probably from similar kettles. No. 691: A fragment of the base of a brass kettle or pail, diameter ca. 9 inches. Several cast lugs: No. 885: with rivets for attachment to body of kettle, width 2¼ inches; No. 321: with holes for attachment and for a separate handle, width 4 inches; No. 1246: with holes, width 2 inches.

Griddle.—No. 325: Cast iron, with low rim and annular rest (lacking handle); diameter 9¾ inches.

Coffee grinder.—No. 311: Steel handle only, length ca. 5½ inches, bearing cast letters in relief: "ADAMS"; probably a patented variety (pl. 25, *c*). No. 711: Small fragment of conical perforated housing in which such handles fitted; diameter ca. 3 inches; height 1⅝ inches.

Coffeepot.—No. 948: Handle only, blue enameled steel "hollow-ware"; length ca. 5½ inches. Enamelware (often called "graniteware") dominated the American market, supplanting much of the earthenware previously sold, about the year 1900, and was itself superseded in many fields by newer products of aluminum, glass, and, most recently, plastic.

Whetstones.—Five specimens (all fragmentary); one (1122), of micaceous schist, apparently commercially made; width ca. 1⅜ inches, thickness 7/16 of an inch. The others (Nos. 1121, 1123, 1124, 1125), fragments of tabular stones, appear to be of local origin.

Knife, kitchen.—No. 1194: Fragmentary, steel, with wood fittings, attached by five small brass pins; original length ca. 10 inches (pl. 25, *f*). No. 986: fragments of curved blade of a knife of comparable size.

Forks, table.—Nos. 324, 567, 783, 918, 919: Fragments of metal parts. One (No. 783), probably originally 7 inches in length, still retains one of the two original wood fittings, held in position by three small brass pins (pl. 25, *e*). All of the specimens are fragments of three-tine forks, except for one (No. 919), which has but two. Bone and metal parts of what is probably another specimen (No. 1053), were fastened with two large and two small brass pins; original length of this specimen ca. 7 inches.

Spoon, serving.—No. 1009: Iron, length ca. 8 inches (broken); the bowl is pointed, and the handle is curved (die stamped toward the under surface, for strength). No. 400: Handle fragment only, die stamped, of iron.

Jugs, stoneware.—Numerous small sherds, buff, light brown, and dark brown in color. One rim fragment (No. 460) is from a dull brown small-mouth container, (perhaps a preserving jar). Another (No. 654) is a shoulder fragment of a light-buff-colored bitters bottle, of a common variety, similar to specimens found at Fort Berthold II and elsewhere (Smith, MS.). Of the remaining sherds (Nos. 22, 462, 545, 799, 1174, 1267) totaling approximately 64, some are fragments of jugs and covers, and illustrate common color varieties—gray, brown, and buff particularly.

Jardiniere.—No. 1265: Large heavy sherd of light-brown slipped ware, hand thrown but bearing bold appliqué floral design in relief (pl. 25, *k*). (Period 1890 (ff.?).)

Mixing bowl.—No. 459: Large sherd of buff queensware, decorated with alternating narrow brown and white bands; height ca. 5 inches (pl. 25, *l*). A few other sherds from such vessels (Nos. 21, 463, 1159) are all of a buff color.

Bowl (whiteware).—No. 439: White glazed, flaring cuplike shape (fragments only); thinwalled, hand decoration a wide band of pale green near the lip, with a narrow band of pale red below; not measurable. Another fragment (No. 453) of a grayish-white earthenware, bearing manufacturer's marks (transfer): "Ironstone China / [British arms] / J. & G. Meakin / Hanley / England" (pl. 25, *m*). This firm, one of the best-known Staffordshire producers (at present Stoke-on-Trent) of "ironstone" ware, began this manufacture early in the last century and still exports large quantities.

Teapot.—No. 1146: Fragment of the perforated strainer only; glazed white earthenware of good quality.

Cups.—No. 801: Glazed grayish-white "ironstone" type cut (without handle), with strong annular base (probably used without a saucer); lacks manufacturer's marks; height 3½ inches, diameter at lip 4 inches (pl. 25, *o*). No. 802: Identical specimen (fragmentary). No. 445: Similar specimen (fragment), having thicker walls. No. 438: Base only of a smaller specimen, having slightly different shape.

Saucers.—No. 803: Glazed grayish-white "ironstone," lacking manufacturer's marks; height 1½ inches; diameter 6½ inches; widely flaring rim, probably for use in cooling beverage from the cup, as was formerly often done (pl. 25, *n*). No. 805: Similar specimen, except that it has underglaze transfer designs in grayish-black, an Oriental scene with arabesque border, on upper surface, and on the base the mark (transfer): "Calcutta / E. Challinor" (pl. 25, *p*). The firm of Edward Challinor (or Chalinor) is said to have begun the pottery business at Burslem (now part of Stoke-on-Trent), Staffordshire, England, as early as 1819, having acquired works previously owned by the great Wedgwood family; Challinor is also said to have manufactured at Fenton (also now part of Stoke-on-Trent) from 1862 until 1891 (Chaffers, 1954, p. 662; Cushion and Honey, [1956], p. 296).

Fragments (No. 1154), probably of a cup and saucer, apparently of bone china, having a wide yellow band and a narrow gold-leaf band; are probably hand-decorated fragments. Another sherd (No. 1161), a small portion of the base of a bowl or cup, has an exterior surface of copper luster, the interior a cream glaze. Three sherds (No. 1159) are from a cup or bowl of Bennington-like ware (American or English).

Tableware ("whiteware"), miscellaneous.—Numerous other shapes are represented by fragments of common whiteware obtained, such as plates, bowls, covers, cups, saucers, and the like, of the "ironstone" class, undecorated (e.g., No. 464, with 230 sherds); one sherd of the lot preserves a human face with helmet, in relief, of a Classical design, perhaps from a tureen or sugar bowl (pl. 26, *h*). Nos. 19, 804, 1158: Other comparable lots of sherds. One lot (No. 726) even includes heavy sherds apparently from a chamber pot. Few manufacturer's marks appear on these pieces; one (No. 454) bears the mark (transfer) "Ironstone chin[a] / James Edwar[ds]"; another (No. 1157) that of "T. J. & J. Maye[r] / Dale Hall Potter[y] / Longport / Improved Berlin Ironsto[ne]." The Edwards and Mayer firms are well-known manufacturers of Stoke-on-Trent (which includes Longport or Longton).

Numerous other sherds of the same types of wares have transfer designs in blue (Nos. 20, 449, 1148, 1263), some of these of the "featheredge" types of tableware; others are in black (Nos. 1151, 1216), red (Nos. 20, 450, 729, 1149), or brown (No. 1152). Special designs of this type in brown are (No. 443), human figures (pl. 26, *b*); (No. 444), scenes (pl. 26 *a*); and (No. 807) floral designs. Two sherds in black transfer (Nos. 445, 448) have floral designs (pl. 26, *e*). Some of the transfers are inside-outside designs.

A few sherds are from hand-decorated whiteware vessels. One (No. 806) has "squiggles" in light blue (pl. 26, *c*); another (No. 808) has bands in red and green (delftlike); another (No. 1150) has a floral design in red, green, and blue. One sherd (No. 543), apparently true "creamware," has a brown band and a blue floral design (pl. 26, *d*).

Several sherds exhibit molded decorative designs (of varieties introduced during the late 19th century, manufactured with dies). One (No. 447) includes the finial of a cover, perhaps of a sugar bowl (pl. 26, *f*). Another (No. 725) is a nonfunctional floral lug (pl. 26, *g*). Two (Nos. 457, 458) are three-lobed ends of handles. One (No. 724) is a lug from a tureenlike piece (pl. 26, *j*).

Tumbler (drinking glass).—Nos. 817, 818: Heavy clear-glass pieces of good quality, having an octagonal base and flat side panels (rising to a smooth rim); height 3½ inches; diameter of base (least) 2⅜ inches; size approximately 6 ounces liquid, and probably whiskey glasses (pl. 25, *g*). Nos. 25, 471, 472, 473, 721, 1171: Fragments of bases of identical specimens.

Bottles, glass.—Nos. 25, 473, 492–496, 547, 594, 623, 658, 675, 723, 731, 819, 1171, 1221, 1270: Approximately 742 assorted sherds of bottle glass, clear, light and dark green, brown, and blue tints. Shapes represented include wine bottles, whiskey flasks, and condiment (pickle) jars. The flasks are plain, violin-shaped (with scroll decorations in relief), and others, with some fragments of special patterns, such as one (No. 473) marked "Old Rye" (in panel), with part of a human figure, similar to, if not actually the somewhat rare "Pike's Peak or Bust" flask (pl. 25, *j*). Others (No. 722, e.g.) appear to be bits of eagle flasks (spread eagle, head to left) or of portrait flasks, on which the eagle was commonly used. One fragment (No. 473) has the eight-point sunburst motif often used, but in this instance the glass is of a brown tint (probably rare) (Cf. McKearin and McKearin, 1941, pp. 483, 570–577).

Bottle stopper.—No. 1165: Clear glass stopper, similar to those used in pharmaceutical bottles, having a flat round grip; height 1¾ inches.

Thermometer.—No. 1168: Fragment of clear-glass rod having a thread of pale red through the center; fire damaged; length ca. 1¼ inches.

Pencil, slate.—No. 1056: Fragment of gray-black slate pencil, flattened and pointed.

Tabulating device (?).—No. 1038: Brass key only, length 2½ inches, with finger rest and holes for pivots; probably from a simple accounting device (pl. 26, *k*).

Battery, dry-cell.—No. 211: Portion of carbon column only, hexagonal in cross section and ribbed; maximum diameter 1 inch; of a kind used ca. 1890 to date.

Insulator, electrical.—No. 1163: Molded "porcelain" (glazed white earthenware), of type used with telephone wire, ca. 1890 to date; height 1⅛ inches; diameter 1⅛ inches. A fragment of another (No. 456), of slightly different design, has a diameter of 1 inch.

Plate glass.—Nos. 468, 469, 1167: Fragments only, 3⁄16 and 5⁄32 of an inch in thickness; one fragment has a ground and polished straight edge. Possibly from the recent era of the motor vehicle.

MILITARY GOODS

(*Cf. also Personal Possessions*)

Hat ornament.—No. 1058: U. S. Army regulation officer's hat ornament, brass, die-stamped, with spread eagle (head to left), shield, stars, "E pluribus unum," and other devices (pl. 27, *f*). Formerly worn at the side of the black felt hat, for dress occasions; both officers and men wore the insignia of the branch of service (such as the bugle of the infantry) with the less formal forage cap, or on the front of the officer's felt hat. A similar specimen was obtained at the site of Fort Stevenson (Smith, 1960).

Buttons, military.—No. 1069: Brass uniform button, diameter ¾ of an inch; regulation U.S. Army style, with devices and, on the reverse, the die-stamped legend: "Extra/Quality," only. Nos. 130, 1070: Two brass uniform buttons, diameter 9/16 inch; regulation U.S. Army style, the shield bearing the letter "D" in relief (indicating the company letter) and, on the reverse, the die-stamped legend: "Scovills [sic] & Co./Extra" (pl. 9, *e*). No. 1071: Another specimen is identical except in having the letter "I" on the face, and in lacking a manufacturer's mark on the reverse (pl. 27, *c*). The Scovill Company, of Waterbury, Conn., has long been one of the chief American manufacturers of uniform buttons and other brass and metal products (Lathrop, 1926, pp. 88, 101–102). Similar Scovill specimens have been obtained at the site of Fort Berthold II and elsewhere (Smith, MS.).

Companies D and I of the 8th Minnesota Volunteer Infantry and Companies D and I of the 2d Minnesota Volunteer Cavalry were included in the Sully command of the summer of 1864, and served on the Dakota and Nebraska territorial frontier (Minnesota, 1890–93, vol. 1, pp. 386–415; 543–571).

Nos. 131, 1072: Two brass uniform buttons, diameter 9/16 of an inch; regulation U.S. Navy style, with spread eagle (head to right), anchor, 13 stars and, on the reverse, the die-stamped legend: "Scovills [sic] & Co." (pl. 27, *b* and *d*). The presence of Navy buttons at this site might be explained by the suggestion that they were surplus military goods issued to the Indians by the Indian Office, during the period 1859–1863 or subsequently.

Scabbard.—No. 1042: Brass tip only; conical, length 3⅛ inches (pl. 27, *a*).

PERSONAL POSSESSIONS

(*Cf. also Trade Goods*)

Medal, religious.—No. 505: Roman Catholic medal, cast brass, oval with loop; height 28.0 mm., width 20.0 mm. (pl. 27, *g* and *h*). Obverse: figure of the Virgin Mary, with rayed hands, upon a hemisphere, surrounded by the legend "O Marie Consue San Peche Priez Pour Nous/Qui Avons Recourse a Vous" and the date, 1830. Reverse: figure of St. Patrick with crosier, which pins a snake to the ground at his feet, and surrounded by the legend: "Saint Patrick Priez Pour Nous."

In the year 1830, Catherine Labouré (subsequently canonized) experienced visions of the Virgin, and the Order of the Sacred Heart was established in commemoration of these events. The first medals of the Order are said to have been struck in 1832 (Catholic Encyclopedia, vol. 10, p. 115). Two other Catholic medals were obtained at the site of Fort Berthold II, one of these of the slightly later variety ordinarily referred to as the Miraculous Medal (bearing the letter M, a cross, and two hearts bearing flames, and on the reverse an image of the Virgin also) (Smith, MS.).

Despite the legends of this medal, its manufacture may have been elsewhere than in France; Spanish-language medals, designed for the Mexican market, are said to have been struck at Birmingham, England (long a center of the manufacture of metal goods for export) at this period (Gregg, 1954, pp. 174–175 and note). In this connection, it is probably worthy of note that the name of the saint here appears in the English form (Patrick), though the legend is in French.

Coins.—No. 1011: Silver U.S. dime, dated 1857, without mint mark, indicating the Philadelphia mint (pl. 27, *j*). No. 1010: Silver U.S. quarter dollar, dated 1857, and with mint mark "O," indicating the New Orleans mint, which operated from 1838 to 1909 (pl. 27, *i*).

Pocket knife.—No. 210: Metal and wood fragment only, the wood held in place by four or more small brass pins.

Tobacco pipes (molded clay).—No. 1192: Glazed, buff color; having a short stem and used with a reed; the bowl is a human head, in Classical style; height of bowl 1¾ inches, diameter of bowl ca. 1 inch (pl. 27, *q*). This variety of glazed pipe is sometimes said to be of Continental (Dutch or North German) style. No. 1077: Fragment of the lip of the bowl of a glazed pipe, in white (at the rim) and brown; diameter ca. ⅞ of an inch, the bowl slightly bulbous. No. 193: Slightly bulbous, off-white, unglazed; exterior diameter of bowl ca. 1 inch; height ca. 2 inches (pl. 27, *s*); the decoration (in relief) is a calyxlike leaf arrangement, enclosing the bowl, with a series of 14 "stars" or sunbursts (8-pointed) about the lip; below this band, and between the points of the leaves are four decorative elements (obscure "stars" or fleur-de-lis). Nos. 151, 153, 154, 196, 705, 823, 1074, 1075, 1079, 1081, 1092, 1232: Twelve fragments of bowl, of identical style; two (Nos. 705, 823) show that the base of the bowl ended in a small spiral, which served as a heel.

The soleil (sun with rays, or sunburst) symbol is particularly associated with Louis XIV of France, known as the "Sun King," who reigned from 1643 to 1715; the fleur-de-lis is an even more ancient French heraldic device. The presence of such decorative elements on these fragments suggests that the pipes are of French manufacture. (Manufacturer's marks ordinarily appear on the stem during the 19th century, but no such marks have been preserved on stem fragments obtained.)

This specimen (No. 193) has been darkened by smoking, and part of the original dottle (No. 194) was also obtained.

No. 150: Fragment of the bowl of a pipe, height ca. 1¾ inches, having the letters (in relief) "TD," with seriphs, on either side of the mold joint facing the smoker, the letters surrounded by a circle of 13 stars (6-pointed), and a band of similar stars about the circumference of the bowl, at the lip. Nos. 152, 822: Small fragments of pipes of apparently identical design. Very similar specimens of this common variety of pipe have been obtained at the sites of Forts Ridgely (Minnesota), Laramie (Wyoming), Berthold I and II (North Dakota), and elsewhere (cf. Smith, MS.). The employment of only 13 stars, frequently found on this class of pipes, suggests that the design may have been particularly for the American market, since the variety is known to have been manufactured in Europe, whereas marked American specimens are not known. Long after the adoption of an American flag, about 1777, regimental flags are said to have exhibited 6-point stars almost as frequently as 5-point, and it is probable that the former design for the star was the earlier, whereas the latter came to be the proper style in the canton of the American ensign (Quaife, 1942, pp. 141, 147).

Nos. 583 1091: Small fragments of undecorated short-stem pipes, for use with a reed, of buff-red ("brick") color, height of bowl ca. 2 inches. The short stem is provided with a bold milled flange (pl. 27, *r*). This type of pipe is believed to be of American (Pennslyvania German ?) manufacture, in imitation of aboriginal American styles of pipes, or of Continental styles. Nos. 23, 195, 461, 1078, 1090: Fragments of bowl, heel, and stem of similar pipes, gray-buff in color, undecorated, and lacking any flange on the stem.

Nos. 155, 192, 474, 501, 523, 626, 824, 1193: Approximately 52 fragments of white clay-pipe stem, some blackened by use, but lacking manufacturers' marks; only 2 (Nos. 155, 192) show any decorative designs, and both may be from pipes of the style described above (No. 193), having a calyxlike bowl decoration.

Cosmetic jars.—No. 228: Cream-white glazed earthenware jar (top only), lacking decoration or marks; height ⅝ of an inch, diameter 2⅝ inches, probably for cosmetic (such as shaving soap) or powdered snuff (pl. 27, *v*). No. 1145: Fragment of top of similar specimen, diameter ca. 3 inches, having (in black transfer) manufacturer's marks with floral border: ". . . Pre[mium /Sh] aving Crea[m] / . . . & Silver Medals award[ed . . .] / . . . Institutes of New Yor[k . . . / Phi]ladelphia & Boston [. . .] / X. Bazin, / 114 Chestnut St. / [Phi]ladelphia . . ." (pl. 27, *w*). A small fragment of the top of another specimen (No. 440) has a floral decoration in dark red, similar but not identical.

Xavier Bazin, perfumer, is listed in Philadelphia directories as having been located at 114 Chestnut Street from 1850 to 1856; in the latter year he removed to 166 Chestnut, and in 1869 took a partner (information from R. N. Williams, 2d, Director, Historical Society of Pennsylvania, Nov. 19, 1957). It is therefore probable that this fragmentary specimen of his jars for soap was manufactured prior to 1856. No. 707: A portion of the side of a small clear-glass jar, height ca. 2¼ inches, diameter ca. 1¾ inches, and cylindrical in shape, with numerous small side panels, is probably also a cosmetic container.

Comb, ornamental.—No. 1235: Brass frame only, having a floral die-stamped design and small glass insets (some lacking); width 4⅜ inches (pl. 27, *x*).

Comb.—Nos. 34, 1108: Two fragments of black hard-rubber comb, of a style with fine teeth on two edges, often used for infants' hair, and believed to have been much used in the Indian trade, specifically for ridding head hair of vermin.

Doll.—No. 1096: Foot only of good quality white "porcelain" doll, the shoe painted black, with lacing on the inner side of the ankle, and buff on the sole; the shoe is notably pointed, and is of a style of footwear of the 1860's; length of shoe approximately 2 inches (pl. 27, *u*). No. 1144: Fragment of a grayish-white "porcelain" doll leg, diameter ca. 1 inch (hollow).

Figurine or vase.—No. 797: Fragment of the rectangular base of a white "porcelain" figurine or miniature vase, with traces of gilding.

Marble (child's).—No. 1093: White (apparently natural marble), with traces of narrow painted red bands about the middle, diameter ¾ of an inch (pl. 27, *t*).

Thread.—No. 156: Fragment of cotton (?) thread, apparently preserved because of contact with copper salts.

Pins, garment.—Nos. 127, 209: Thirteen common brass pins, with small heads; lengths 1 to 1½ inches.

Buckles, suspender.—No. 1022: "White metal" and iron, width 1½ inches; die-stamped with simple floral decoration. No. 1021: Another specimen, of brass, also die-stamped with a floral decoration.

Garment hook.—No. 148: Brass, with loops for fastening by sewing; length 11.0 mm.; used with an eye, fastened to an opposite edge of a garment. This device, formerly (like the shoe button) so very common, was originally devised to meet the needs of persons who for religious reasons did not wear garment buttons—groups such as the Amish (a conservative division of the Mennonite sect). Once available in the market, "hooks and eyes" were sold in vast quantities; in recent years the demand for them has steadily declined in the face of competition from newer shoe- and garment-fastening devices such as the slide-fastener. (A copyright was issued in 1923 to the B. F. Goodrich Co., for the name "Zipper," for overshoes equipped with these special slide fasteners; this trade name is today almost more familiar than the generic name, "slide fastener.")

Buttons:

Bone.—No. 1073: Lathe-turned, having 4 holes, diameter 1¼ inches (pl. 27, *k*). Nos. 29, 1082: Five similar specimens, diameter ⅝ of an inch; the proportion of rim to center and the spacing of the holes vary. Nos. 29, 33: Two similar specimens, diameter ½ of an inch, also varying in proportions. One (No. 1086), apparently bone dyed black, has a wide rim and 4 holes; diameter ⅝ of an inch.

Shell.—No. 1083: Turned specimen, having a wide rim; "mother of pearl" (probably fresh-water shell) diameter ⅞ of an inch, with 4 holes (pl. 27, *l*). No. 28: A similar specimen, diameter 9/16 of an inch, has a narrower rim. No. 1083: Another, diameter ½ of an inch, lacking a separate rim, has a small hole for a metal loop (lacking). No. 1084: Another similar button, of the same size, has a small hole on the under surface for the loop, which was apparently cemented to the shell face. Nos. 27, 1083: Three similar specimens, having 4 holes, diameter ⅜ of an inch. Nos. 27, 182: Four specimens of this size are similar, but have a simple engraved "floral" design on the face. No. 182: Another plain specimen, diameter 5/16 of an inch. Buttons of fresh-water shell ("pearl" or "mother of pearl") were apparently first manufactured in the United States as recently as 1891.

Metal.—No. 1063: Fancy brass button, with shank, the face decorated with a die-stamped star and fillet; diameter ½ of an inch (pl. 27, *n*). No. 1063: Another specimen having a brass base has the face decorated with enamellike material, in the form of a cross; diameter ⅜ of an inch (pl. 27, *m*). No. 1068: A flat brass button, of a style long made (and sometimes covered with fabric), diameter ¾ of an inch, originally had a brass shank (lacking), and carries the die-stamped legend: "London/Imperial." No. 712: Spherical brass button with loop, diameter 20 mm. (pl. 27, *o*). No. 1062: A hollow metal button, having two faces (fire damaged), diameter 1¾ inches, shank lacking, was probably originally cloth covered, traces of fabric being visible on the upper face. No. 596: A similar damaged specimen, diameter 1¼ inches. No. 186: A similar specimen, diameter 9/16 of an inch, also has traces of fabric adhering. No. 132: Another flat button-base, of zinclike metal, with two holes, is crudely cut, diameter ca. 1⅜ inches, and probably also lacks its original cloth covering.

Nos. 104, 129, 183, 184, 185, 476, 507, 816, 1064, 1066, 1067: Twenty-one common metal buttons (iron, white metal, brass, and other metals), diameters ½ to 1 inch, of various styles (flat, hollow, with and without shank, with 2 and with 4 holes, and the like), some fire damaged, some of the varieties used with "overall" work clothing.

Milk glass.—Nos. 30, 31, 32, 181, 504, 815, 1085, 1087, 1088, 1191: Seventy-nine specimens of milk-glass buttons, largely white, having 4 holes, diameters ⅜ of an inch to 11/16 of an inch. Three of these (Nos. 504, 1088) have a molded decoration (dots near the rim); three (Nos. 31, 1085, 1088) have a simple transfer decoration (a blue or red "fabric" pattern). Three other similar plain specimens (Nos. 31, 32, 1087) are of a blue milk glass; one (No. 31) is a plain buff color. Milk glass is an opaque variety of ordinary glass that became very popular early in the 19th century; many garment buttons are today still made of glass, despite the introduction of newer substances such as plastics.

Hard rubber.—No. 128: Fancy button having a hard rubber base, with a molded shank (missing) and an inset ceramic face, in green, gold, and white; diameter 9/16 of an inch (pl. 27, *p*). Probably manufactured under hard-rubber processing patents, first issued in the 1840's to Charles Goodyear.

Shoes:

No. 213: Heel only of a child's leather shoe, with metal pegs; width ca. 2 inches. No. 1233: Heel only of an adult's (woman's?) shoe, with metal pegs; width ca. 2½ inches.

TRADE GOODS

(*Cf. also Personal Possessions*)

Firearms.—A small group of gun parts, flints, cartridges, bullets, and balls was obtained in excavations, of which a detailed account has kindly been prepared by Dr. Warren W. Caldwell for separate publication (Caldwell, MS.). Reference is therefore made to this account for descriptions of these objects.

Cap box.—No. 1050: Brass (cover only), diameter 1½ inches; with die-stamped legend: "Goldmark's Patent American/Safety Percussion Caps/Metal Lined/[spread eagle, head to left, with shield]/D 100 G/Warranted/Water Proof" (pl. 28, *g*). J. Goldmark was a New York manufacturer of ammunition (Lewis, 1956, pl. 44, *o*).

Arrowpoint.—No. 101: Steel, having a small stem; length ca. 2⅜ inches (pl. 28, *m*). Numerous comparable specimens were obtained at Fort Berthold II (Smith, MS.).

Half-ax ("*squaw ax*").—No. 639: Wrought iron; height 6½ inches; width of blade 3⅞ inches; weight 1 pound, 14 ounces (pl. 28, *a*). Found in the original trench fill, along the west stockade, with the single-bit ax described above (p. 132). A similar specimen, weight 2 pounds, 5 ounces, was obtained at the site of Fort Berthold II (Smith, MS.).

Trap, animal.—No. 377: Tapered fragment (portion of spring) of steel trap, original length ca. 5 inches (pl. 28, *l*); apparently of the variety frequently known as the "Oneida" trap, manufactured at Oneida, N.Y., by the Oneida Community (also well known for its silverwork), established in 1848.

Tweezers.—No. 1033: Sheet brass, length 2⅝ inches; a part of one branch is missing (pl. 28, *n*). Comparable specimens were obtained at Fort Berthold II (Smith, MS.). An article frequently traded to the Indians, for the removal of beard hairs.

Earbob.—No. 1019: Conical silver-plate (hollow) ornament, having a small loop at the upper end for insertion in the lobe of the ear; length ca. 1 inch (pl. 28, *j*).

Bracelet.—No. 926: Undecorated oval bracelet, of heavy brass wire; width ca. 2½ inches (pl. 28, *o*). Similar specimens were obtained at Fort Berthold II (Smith, MS.).

Finger rings.—Nos. 142–146, 198, 1012–1016: Eleven specimens, all of brass or white metal, narrow bands differing slightly in width, and lacking decorations or engraving; sizes range from diameter 17 to 22 mm. Several similar specimens were obtained at Fort Berthold II (Smith, MS.).

Tinklers.—No. 1020: Two sheet-brass cones, rolled, length ca. 1½ inches and 1 inch (pl. 28, *h*, *i*).

Beads, glass.—Approximately 3,120 beads (plus 54 fragments) were obtained at the site of Fort Pierre II, an array of sufficient numbers and varieties to provide interesting material for comparison with other large bead collections (cf. Smith, 1953). A detailed account is not attempted here, but specimens and groups of special note are as follows:

Nos. 35, 187, 813: Sixteen whole or fragmentary dull white (satiny) tubular beads (similar to the French *canon* bead); diameters 3 to 5 mm., of irregular lengths, 8 to 22 mm. (pl. 29, *k*). Nos. 37, 53, 62, 190: Twenty translucent colorless beads, made of hexagonal tubing and sometimes irregularly finished, diameters 4 to 6 mm., lengths 3 to 6 mm. (pl. 29, *i*). Some of these have been provided with facets at the ends, in finishing them for sale. Nos. 47, 66: Forty similar specimens, violet-black in tint. Nos. 55, 66: Sixteen similar, in amber tint. Nos. 52, 53, 190: Fifty-five similar, in a dark blue tint. Nos. 62, 66, 77: Twenty specimens, of a dark green tint. Nos. 52, 62, 64: Two dark-blue translucent beads (similar to the preceding, but with larger facets, and more carefully finished) are 18 mm. in length, 6 to 7 mm. in diameter, the diameters thus approximately one-third the length of the beads (pl. 29, *j*). Nos. 62, 64: Three similar dark-green translucent beads. No. 76: A similar red translucent bead. No. 64: One similar black specimen. No. 37: A fragment of a similar colorless bead. No. 50: Spherical bead, greenish paste, having parallel ridges about its circumference (unique specimen); diameter and length 8 mm. (pl. 29, *d*). No. 190: Fragment of black bead, olive-pit shape, original length ca. 18 mm., diameter ca. 10 mm. No. 78A: Fragment of large opaque blue bead, diameter ca. 20 mm. A comparable, even larger specimen was obtained at Fort Berthold II (Smith, MS.). Nos. 60, 78A: Similar black beads, diameters 12.5 mm. and 11.0 mm. (pl. 29, *c*). No. 812: Seven identical ornamental beads, slightly oblate-spherical, diameters 12.5 to 14.0 mm., having an opaque milky paste, and with dark-blue and white marbling; probably originally worn in a strand (pl. 29, *l*). Recovered from House-site A (dwelling), at the floor level, but not in direct association with each other.

No. 1156: A portion of a spherical black bead, diameter 15 mm., having surfaces marbled in red and white, is of a similar art style (pl. 29, *g*); this specimen was recovered at House-site B (warehouse).

No. 814: Portion of a spherical bead, diameter 14 mm., having a pale-blue paste, and spiral white band, extending from the "equator" to one end of the bead (pl. 29, *e*).

Nos. 54, 70: Twenty-six spherical, dark-blue, translucent beads, diameters 7 to 9 mm.

Nos. 69, 70, 78A, 190, 191: Spherical opaque white beads, diameters 8 to 11 mm., only 3 specimens remaining unbroken; numerous fragments of similar large white beads were obtained, and the fact suggests that this variety was specially liable to breakage in handling.

No. 78: A similar specimen is buff-tan in color, possibly imperfectly fused frit or paste.

No. 61: Opaque white ovoid bead ("pigeon egg" or olive-pit shape); diameter 16 mm., length 26 mm. (pl. 29, *f*). Nos. 36, 56, 190: Five smaller similar specimens, diameters 6 to 8 mm., lengths 11 to 13 mm. (pl. 29, *h*). One (No. 56) has hand decoration, a pale buff spiral line, extending from one end of the bead to the other.

Nos. 70, 71, 190: Twelve near-cylindrical opaque white beads (sometimes retaining a high gloss, others with a "stony" surface texture), somewhat variable in shape and dimensions; diameters 6 to 9 mm., lengths 5 to 8 mm.

Nos. 41, 43, 49, 63, 72, 73, 77, 189: Approximately 1,232 specimens of seed beads of a white color were obtained; some of these are now a buff-tan color, and these may have been from batches of inferior frit, or have been altered by chemical action while lying in the earth. The sizes of these small beads vary from 1.5 to 4.0 mm., and the entire group tends to fall into 3 subgroups (1.5 to 2.0 mm.; 2.0 to 2.5 mm.; and 2.5 to 3.5 mm.) (cf. Smith, 1953).

Nos. 42, 45, 46, 48, 59, 65, 67, 188: Approximately 1,038 blue seed beads were obtained (some of light blue, probably as a result of chemical action), of sizes comparable to the preceding. As has been noted elsewhere, white and blue seed beads appear to have been particularly in demand in the Indian trade of the upper Missouri region.

No. 75: Approximately 55 specimens of translucent blue seed beads, diameter 1.5 to 2.0 mm. only, one of the smallest varieties of beads in the present collection.

Nos. 38, 39, 40, 58, 76, 177, 188: Approximately 507 opaque red seed beads (many now pinkish), of sizes comparable to the preceding.

Nos. 44, 57, 68: Approximately 142 greenish seed beads (fragile, and of inferior quality), similar in size.

Nos. 57, 68: Approximately 92 black seed beads, of similar sizes.

No. 74: Eleven colorless seed beads (only), 1.5 to 2.5 mm. in diameter, one of the rarest varieties in the collection.

Tacks.—No. 1059: Seven brass, round-head tacks, diameter ca. ¼ inch (pl. 28, *b–f*). Such tacks were frequently used for ornamenting gunstocks and other wooden articles, and hence were a trade commodity. Thus at Fort Union, in 1851, with other trade goods, 1½ M [thousand] brass tacks were inventoried, apparently at a retail value of 90 cents per thousand (McDonnell, 1940, p. 211). Specimens similar to these were obtained at the site of Fort Berthold II (Smith, MS.).

Shells, ornamental.—No. 35: Four fragmentary specimens of native dentalia (pl. 29, *a*). Other specimens were obtained at Fort Berthold II (Smith, MS.). Such ornamental shells were obtained by peoples of the upper Missouri by trade with other native peoples, as well as with Whites. Nos. 8, 179, 180, 1127: Six fragments of abalone (*Haliotis*) shell, another Pacific coastal variety of importance in the trade in the interior. The largest specimen (No. 179), 52 mm. in length, has been notched near the narrower end, for suspension (pl. 28, *k*).

Patent medicines.—No. 622: Fragments of a clear glass bottle, with portions of the legend), originally containing "F. Brown's Essence of Jamaica Ginger,
a
Philad-", as is known from an identical complete specimen found at the site of Fort Berthold II (Smith, MS.). Frederick Brown, chemist and druggist of Philadelphia, began in business in 1823; from 1891 until 1920 the business was conducted as Brown and Company. Essence of Jamaica ginger is an alcoholic extract, intended for flavoring purposes. No. 1169: Fragment of the side of a flat clear greenish-glass bottle, bearing in a panel the name "Davis"; identical with a complete specimen of this container found at Fort Berthold II, which also carries the remainder of the legend: "Vegetable Pain Killer." No. 1166: The base only of a small flat bottle of clear greenish glass, two-mold blown, probably for patent medicine.

SUBSISTENCE

Food containers, metal.—Several lots, including tinned-iron food containers, of various sizes, apparently largely cylindrical, were obtained. Examples are as follows: No. 597, flattened, showing style of crimping at the margins; Nos. 389, 415, 573, 598, 632: ends of containers, ribbed, crimped, and sometimes soldered, which were cut away in opening the originals; Nos. 389, 598: measure 3¼ inches and 3½ inches in diameter. Covers (separate): No. 574: 3¼ inches diameter; No. 125: 3 inches diameter, both of shallow depth. No clues were seen to specific food varieties represented.

Condiment jar (?).—No. 1220: Clear glass jar (probably two-mold manufacture), probably for pickles or sauce, having flat panels on the four sides of the body; diameter of base (round) 2¼ inches; height not obtainable (pl. 25, *h*). One of the side panels still retains a part of the original lettering: "C . . . ," probably a part of a manufacturer's mark.

Wine bottles.—No. 1164: Clear dark-green glass seal only, from a wine bottle of the same tint, bearing the legend in relief, in an oval: "St. Julien/[grape clusters on a branch]/Medoc" (pl. 26, *i*). Médoc is a famous wine-producing region in the Department of Gironde, France.

Whiskey flasks.—No. 722: Fragment of the side of a clear greenish glass flask, with the spread eagle (head to left), probably from a quart-size bottle (pl. 25, *i*). Fragments of flasks of other designs, such as the "violin-shape," with scrolls, and types having the "sunburst" motif, are also present (cf. p. 136); one, No. 473, still retains the legend "Old Rye" (pl. 25, *j*).

Fruit pits.—No. 1128: Peach pit. Nos. 11, 1129: Pits of native fruits, probably including wild plum and chokecherry.

Animal bone (food-refuse).—Native animal varieties, represented here by various lots of fragmentary bone, and doubtless contributing their share to the subsistence of the trading post, include *Bison* (or *Bos*, beef), deer or antelope, jackrabbit, and cottontail. One domesticated animal, the hog, is also represented, though it is probable that hogs would not have been introduced here until the later period of agriculture and permanent homesteading. (Identifications of these and other bone materials were made by Dr. Theodore E. White, National Park Service, formerly of the Missouri Basin Project.)

ARTIFACTS OF NATIVE SIGNIFICANCE

Hammerstones.—No. 160: Ovoid, yellow crystalline quartz pebble (broken), having deep pitting on edges, as a result of use; probably broken in use; maximum length 102 mm.; maximum thickness 45 mm. (pl. 30, *m*). No. 159: Ovoid, naturally smooth fine-grain granite pebble ("mano" shape), maximum length 126 mm.; thickness 40 mm., having slight pitting at extremities, as a result of use; may also have been used as a grinding stone (pl. 30, *l*). No. 585: Ovoid granitic pebble, maximum length 52 mm.; maximum thickness 34 mm., with slight pitting at extremities (pl. 30, *k*). No. 1119: Ovoid, slightly flat slaty pebble; maximum length 71 mm.; maximum thickness 16 mm.; the entire circumference at the edges is pitted (pl. 30, *j*).

Point (stone).—No. 1109: Small triangular grayish flint point; height 22 mm., fire damaged.

Knife (stone).—No. 4: Small fragment of milky plate chalcedony knife, with one flaked edge.

Pottery.—No. 538: Six small body sherds, thin ware, incised decoration. Nos. 1/1, 1/2, 157, 158, 582: Five small body sherds, having cord-wrapped paddling or incised decoration. No. 1214: Small plain micaceous rimsherd. No. 1230: Similar rimsherd, except having cord impressions on the lip.

Catlinite objects.—Pipes, tobacco: One (No. 727) has a cylindrical (slightly flaring) bowl, lacking the stem portion; is undecorated but has a tapering, beveled projection opposite the smoker; height of bowl and stem portion 73 mm., exterior diameter of bowl 27 mm. (pl. 30, *d*). Three fragments of stem portions (Nos. 166, 1136, 1137) of similar pipes, having a flattened surface upon which to rest the pipe. One other bowl fragment (No. 2) is crudely decorated with straight-line engraving (pl. 30, *e*). Nos. 828, 829, 1132, 1133, 1134, 1138, 1231: Seven additional fragments having similar plain bowls; one is fire damaged after use.

Four fragments of catlinite (Nos. 139, 167, 830, 831) are portions of the tapered, beveled projections of pipe bowls opposite to the smoker; two of these have been ground smooth on the broken surface, after breakage; one (No. 830) has been prepared for lead inlay on four sides (pl. 30, *f*); one is fire damaged after use.

Catlinite objects, products of various native Indian groups who frequented the quarries in southwestern Minnesota, were purchased by White traders at one period for trade with other native groups—an interesting example of cultural exchange (Hayden, 1867, p. 274). Comparable late 19th-century artifacts of catlinite have been found at many excavated sites, such as Like-a-Fishhook Village and Fort Berthold II (Smith, MS.).

One unique specimen of pipe bowl (No. 1135), of catlinite, has a flat, rectangular bowl, for use with a reed stem; height 44 mm., width 27 mm., thickness

13 mm., the base beveled from the two sides; the bowl opening is forward, away from the smoker, and the interior is tapered to meet the stem hole, also tapered, at right angles (pl. 30, *g*). This specimen also has crude fine-line engraving on the side to the left of the smoker (a human figure in half profile), to the right of the smoker (a human face, fullface, with long hair and beard), and toward the smoker (a human figure in profile). The piece may equally well have been made by a White person rather than by an Indian.

Two small catlinite objects (Nos. 1131, 1130), perhaps also products of White men, as leisure-time activities or as pocket pieces, are also present (pl. 30, *h* and *i*). The first, smoothly polished, is pear shaped, and has a maximum dimension of 25 mm. The second is a flattened sphere, maximum diameter 27 mm., engraved with letters: "Pat," "Hat," "Cat," "Dog," "Zie-zie [?]" (perhaps a personal name), "H," and other obscure letters.

A ringlike catlinite object (No. 827), perhaps an ornament, may originally have been a section of the rim of a pipe bowl; this has a crudely cut groove about the circumference, diameter 23.0 mm. Fragments of two partially finished objects (Nos. 168, 586, 1140) are too small to reveal original complete shapes.

Two sawed and polished chunks of catlinite (Nos. 169, 539) were too small or too poor in quality to have been further worked. The presence at this site of fragments of such raw materials suggests that native groups visiting here had themselves frequently visited the quarries for materials, distant approximately 250 miles. The Yankton Dakota traditionally claimed the exclusive right of working these quarries, but other groups considered the quarries common property so far as their exploitation was concerned.

A fragment (No. 161) of typical Sioux quartzite, preserving evidence of having been roughly shaped by pecking and sawing, is also present. This quartzite overlies the true catlinite at the Minnesota quarries.

Bead (*shell and metal*).—No. 10: Disk-shaped shell bead, diameter 12 mm., thickness 4 mm., having a loop of fine brass wire, probably for suspension as an ear ornament, or on a garment (pl. 29, *b*).

Gaming pieces.—Nos. 1141, 1142, 1160: Three gaming pieces, fashioned of glazed earthenwares, doubtless by native players, and having ground or chipped edges (pl. 30, *a*, *c*, *b*). The first is oval, made of a sherd of buff and brown queensware, 22 mm. in length; the second is also oval, of whiteware, having a floral design, hand decorated, length 17 mm. The third is round, of brown and gray-white queensware, diameter 14 mm. Comparable specimens were obtained at the site of Fort Berthold II (Smith, MS.). The use of such pieces in native games of the plum-stone game type, is well known from at least one contemporary authority (Denig, 1930, p. 567, and pl. 72).

Concretion.—No. 1120: Spherical natural concretion (probably iron-bearing), diameter ca. 28 mm. The specimen does not appear to have been modified in any way, but may well have been a personal possession of an Indian visitor to the post, or a pocket piece of one of the traders.

MISCELLANEOUS

Human bone.—No. 1275: Three skull fragments, fire damaged and much weathered, and too small to allow precise identification. These fragments were obtained together with animal bone from cellar A, which after use had been intentionally refilled with random debris, and these fragments may originally have come from a disturbed native burial near the present site, such as site 39ST16, the Breeden Indian Village site, distant no more than a thousand feet, and situated on the first valley terrace. No. 1181A: A fragment of human sacrum, scorched (possibly in recent agricultural operations, as are a number of the animal bones recovered).

Animal remains other than food-refuse bone.—Three animal varieties are represented in fragmentary bone refuse, creatures native to the region but perhaps included only by accident among bone refuse. These are the beaver, the badger (of which a jaw and an occipital fragment remain) and the packrat (of which several bones are present).

As has been mentioned above (p. 127) the articulated skeleton of a young horse was encountered among the random debris in cellar A; the carcass of the colt was presumably disposed of in this fashion merely to remove a nuisance, and during the period of agricultural use of the site. Several bones of dogs were obtained, but it is impossible to determine whether they pertain to the period of the trade (as must have been partly the case) or to that of the farm period. One bone only derived from the skeleton of domestic cat was obtained, presumably from the farm period, though it is known that cats were of importance to traders as well, in earlier periods.

DISCUSSION

Attention may now be drawn to the general significance of the data from excavations at site 39ST217 in the light of the salvage program as a whole, and to the bearing of these data upon the general history of the discovery and first exploitation of the Northern Plains by Whites, preceding permanent settlement by them. This is not the place for comprehensive examination of such topics, but some comment on them is needed if the present data are to be seen in proper perspective.

The primary responsibility of the inter-agency archeological salvage program is the recovery of materials and information concerning aboriginal (particularly precontact) cultures. Only from sites preserving such remains is new knowledge of prehistoric time levels to be hoped for, and it is proper that agencies cooperating in the program should devote less time and effort to sites of historic time levels, either Indian or White. Thus relatively less attention, either prior to, or since the inauguration of the salvage program, has been given to physical remains of former White settlements in the central Dakotas, and for several reasons. This is scarcely surprising, since the region is in many respects even yet little removed from the frontier of permanent settlement.

It is little more than 70 years since part of this region west of the Missouri River and adjacent to it was first opened for White settlement, whereas Indian reservations (the Cheyenne River and Standing Rock Reservations, both for the Sioux, who as recently as 1890 were openly hostile) still occupy all of the west bank above the Cheyenne River and below the Cannonball. This region is today the home of a large Indian population, whose economy differs in many ways from that of rural Whites residing in the two Dakotas. Furthermore, even today the scanty west-river White population is engaged primarily in cattle raising, and communities of more than a few hundred persons are extremely rare. The sparsity of population in this area is well illustrated by the case of the former Armstrong County (now consolidated with Dewey), which had an area of more than 600 square miles, but for which only 52 persons were counted at the census of 1950. Even on the east side of the Missouri, as well, where agriculture is of relatively greater importance, White settlement has never been more than sparse, and here there are several true "ghost towns." There are in the area but two communities having as many as 3,000 persons; these are Mobridge, a division point on the only transcontinental railroad crossing the region (served also by a transcontinental highway), and the capital of the state, Pierre, which in 1950 had a population of less than 6,000, though additions to this figure, in new residents, have accrued from construction activities at the great Oahe Dam.

It is hardly to be wondered at, therefore, that despite their historical importance to a very large region, physical remains from the previous period of the fur trade and hide trade (concluded less than a century ago) have yet received scant attention from students. The State of South Dakota (admitted to the Union, together with North Dakota, as recently as 1889) has in recent years conducted an active program of marking certain sites of historical interest, along highway easements. In a few instances in the present district (as at the site of Fort Pierre Chouteau, mentioned previously) more permanent markers of stone or metal have also been erected. Sites of historical interest here—the number of which is not inconsiderable, as is revealed by the recently published report (Mattison, 1954)—had, however, not received archeological attention, so far as is known, and the present undertaking is thus itself a pioneer effort. In North Dakota, it should be recalled, numerous areas had been set aside because of their historical interest, as State parks; among these may be mentioned the site of Fort Rice, where limited reconstructions were made some years ago. Apart from excavation of parts of the site of Slant Indian Village (32MO26), an earth-lodge village near the Heart River, found recently abandoned by Lewis and Clark in 1804, few actual excavations had been accomplished prior to the present salvage program.

Archeological investigations of historic sites elsewhere in the Missouri Basin reservoir areas have now, however, been made by the Missouri Basin Project and agencies cooperating in the salvage program. Among sites of this kind are some in south-central South Dakota and northwestern North Dakota, below and above the Oahe Reservoir area. Among those that have been studied, with at least partial excavation, are the trading centers known as Kipp's Post (32MN1), ca. 1826–29, and Fort Berthold I and II (32ML2), 1845 to ca. 1890, and the military establishment of Fort Stevenson (32MLI), 1867–1883—all within the Garrison Reservoir area, North

Dakota—and Fort Lower Brulé (39LM53), a shortlived military post of 1870 in the Fort Randall Reservoir area, South Dakota (Roberts, 1952, pp. 377–379; also Mills, 1960, this volume). Thus some previous experience in the excavation of comparable sites of White origin was available for orientation when the present work was begun.

The choice of any site for actual excavation or sampling has, of course, necessarily been governed, first, by the consideration of whether the site is ultimately to be inundated or destroyed by construction activities and, secondly, by the probable significance of the surviving physical remains. Ideally, the archeologist seeks for a site for excavation that promises informative data and object materials, or offers hope of answers to specific questions in the prehistory or history of any region, rather than having to consider arbitrary (and, from the standpoint of historical use of the areas by man, artificial) boundaries such as maximum pool elevations.

For various reasons it has not always been possible to attack definable logical problems in reservoir areas, such as the physical histories of trading establishments, whose sites dot the banks of the Missouri, or even of the several military posts that succeeded to a part of the role of the trading posts. Thus the sites of the great capitals of the trade on the upper river, posts that once dominated all of the Northern Plains such as Fort Union and Fort Pierre Chouteau, remain untouched, together with the more important military installations of the late 19th century such as Forts Sully, Bennett, Rice, and Buford, where rewards in new information will doubtless be noteworthy, when systematic excavation becomes possible. In some respects, this is a fortunate circumstance, since experience and knowledge are slowly being acquired, and methods of excavation and study improved, until such time as these irreplaceable sources of knowledge of earlier western history are at last opened. Fortunately, also, a few of such sites have already been set aside as historical reserves (e.g., Forts Union, Clark, and others) by the State of North Dakota.

Other logical (rather than arbitrary) problems, of a scientific or historical character, are suggested by experience thus far gained in the investigation of sites of earlier White occupation and settlement, as well as by that from numerous investigations at sites of native origin, of historic time levels (such as Like-a-Fishhook Village, adjacent to Fort Berthold I and II, which were dependent upon it). Thus it would be of importance to know more than is now known concerning the true nature of the material culture of the Indian frontier in the region (ca. 1812–1880), which differed from that of the military frontier (ca. 1855–1895), or that of permanent White settlement (ca. 1880 to date). Materials, some of them now from archeological work, others in contemporary documents of various kinds fortunately preserved (such as trading-post inventories, the business records of the day) are available for study of such topics, and further new data will be forthcoming with more extensive exploration of sites, and of archival and manuscript collections.

Something more should be added concerning the relationship of studies of this kind, of historic sites of White origin, to studies of sites of native history in the Northern Plains—the latter of increasing interest to students, with the practical disappearance of native culture and with river-basin salvage operations in the Missouri basin producing whole new groups of data for study of native culture history, as well as for comparative cross-cultural studies other than historical. Direct relationship linking sites of White origin with prehistoric native sites is, of course, ordinarily lacking (though reoccupation of numerous prehistoric sites during the historic period, by both Indian and White groups, is known), but with the beginnings of contact between native and White persons in the area, sites such as those of continued trading activities take on special significance because they are amenable to archeological study.

At the outset of the trade, the free trader, usually solitary (and sometimes himself of mixed blood) often resided with native groups, exerting primary cultural influence as well as frequently intermarrying. These individual traders, with the passage of time, tended to disappear, to be replaced by small groups of traders in semipermanent "houses" (probably of modest size); these houses in turn were replaced by true "posts," usually stockaded and frequently called forts, which accommodated still larger groups of White persons engaged in trade, and eventually had somewhat formal organization of personnel, as well as rather highly organized systems of transport of both goods bartered and furs, hides, and other commodities received. At the height of the trade, operations assumed much of the complexity of any modern commercial system.

The increasing scope and complexity of these commercial establishments is probably directly related to the increasing dependence of native groups upon such alien residents, however permanent. By the 1830's and 1840's in the Dakota region, the trading centers had become major sources of influence upon native culture, even attracting native settlements to their immediate vicinity in some notable instances, settlements that often outlived the posts themselves. Thus the data of the fur trade and Indian trade conducted by Whites are far from merely incidental to native history proper, but fully worthy of study, especially from this point of view, for the light they may shed upon native affairs, quite apart from their independent importance as embryonic White colonies. Native affairs during these years are, indeed, otherwise poorly recorded (despite their crucial significance), except in special spheres, such as that of formal governmental relationships following the ratification of numerous separate treaties and the establishment of agencies, at first often with nonresident agents, on a tribal basis. The trade, in fact, is one of the most persistent and pervasive influences upon native life in the region, over a period of nearly two centuries, and the focal points of the trade are the posts themselves, at the sites of which material remains may be found for archeological study. Few studies by ethnographers or historians thus far offer detailed analyses of the explicit effects of White contact upon native cultures in this region, though a knowledge of these effects is basic to any understanding of culture change among these peoples. Archeological investigations may be expected to yield new materials for study of these sectors of anthropology, when the fieldwork has been systematically undertaken. Efforts thus far made suggest little more than potential contributions to knowledge through careful, localized studies, coupled with broader comparative studies, when these become feasible.

Little can here be said concerning the significance of specific data from excavations at the site of Fort Pierre II. It is apparent above that, even beyond the almost complete lack of information concerning less durable goods once used at the post, as well as larger, more highly prized, or actually more valuable objects such as firearms or coins, certain spheres of activity are poorly represented in either tangible remains or documentary records. Thus, as remarked p. 112), there are few clues to the relative importance in the operation of the post of work animals such as oxen, mules, or horses, or of cultivation of the soil, as in kitchen gardens. Yet by the year 1859, beasts of burden must have played a more important role in the supply and transport of remote trading establishments than they had, perhaps, 20 or 30 years previous. And little of the actual subsistence of such posts is now known, apart from the probability that from the outset they were, perforce, largely self-sufficient during most of the year, and certainly during the winter season.

The archeological accomplishments of the present undertaking may be briefly summarized. They include the following: (1) the definition and delimitation of the complete outline of a trading post, including limited data on construction (materials, design, and construction methods) despite long agricultural use of the site subsequent to its abandonment for trade; (2) the definition of two building sites of the enclosure (probably those of a dwelling and a warehouse) and the obtaining of limited architectural details of these structures; (3) the systematic collection of a comprehensive (if relatively small) group of informative specimens, including construction materials, which illustrate the nature of the trade itself, subsistence, and shelter and domestic arrangements, and reveal specific localized facts on life and customs of the mid-19th century frontier (a subject even yet little known in detail—perhaps less well known, in fact, than native life itself, as a result of long study of the latter topic by many interested students); and (4) the identification, from material evidences and limited documentary sources, of the nature of the site, i.e., that of a trading post, specifically Fort Pierre II, used ca. 1858–1863.

Most of these data, obtained from excavations and related studies, are new. They may perhaps serve as "control data" for future studies of sites of other trading posts, which may have greater individual historic significance or may be more fully preserved. An example is the site of Fort Pierre Chouteau itself, an important commercial establishment, serving as the center of a vast area during an important period in the development and decline of the fur trade and hide trade with the Indian (itself a major historical topic in the earlier history of the West)—a site occupied for a longer time than most such posts, with the possible exception of Fort Union, its equivalent for the trade of the upper parts of the Missouri valley.

RECOMMENDATIONS

Further studies of several kinds are suggested by the results here described of excavations made at the site of a trading post of the past century in central South Dakota, one which had but a brief existence, though perhaps a larger role in its own critical period than has been appreciated by historians. Fort Pierre II was the successor of a great departmental headquarters of the trade at Fort Pierre Chouteau, and as the major trade center of a vast region during a period when the trade was slowly expiring and native-White relations rapidly deteriorating, its full story would complement and complete existing knowledge of its great predecessor, as well as help to place the somewhat more romantic previous establishment in better historical perspective.

It may be reiterated that, even yet, little is known in accurate detail of the design or construction of the numerous earlier trading establishments of the Missouri Basin. Although such posts were in existence, providing specially designed and specially built facilities for commerce and, without fail, for due security to life and property, at least as early as the year 1724, when the explorer Bourgmont built Fort Orléans on the lower Missouri (near the mouth of the Grand River, in the State of Missouri), *not one* original structure remains above ground today, from which their physical character can be directly judged. And there is as yet but one competent reconstruction in the entire basin—Fort Osage, near Independence, Mo. Closely comparable reconstructions and "restorations" maintained for public use, of course, exist elsewhere, but for some of these, it must be said, little or no research, either in the ground or in documentary sources, was ever accomplished. As sources of authentic history these attempts sometimes approach historical fiction, and are not unlike the sometimes inappropriate or inaccurate creations of the motion picture studio, which survive only on film.

These facts suggest that a comprehensive review of surviving documentary evidence (including the pictorial) on the many trading posts would be a first step toward accuracy in understanding them. What, for example, was their customary orientation—if, indeed, they were customarily oriented with compass points? What was their usual size or sizes? Were there more than a few that had a plan other than quadrilateral, such as the three-sided Fort Mandan (comparable despite its essentially military function) or the irregular polygonal Fort Osage (which appears to have been carefully fitted to the peculiar topography of its site)? Where specializations in the outer lines of the palisades or stockade were present, such as blockhouses and gatehouses, did these features conform to designs familiar on some contemporary pictures and more recent artistic conceptions? What was the customary location within these enclosures for the housing and feeding of personnel, for storage and trade, and for the accommodation of animals, or was there, in fact, little pattern in the plans of such posts? Not least in importance would be a review of construction methods employed (where these could be determined), with attention to orthodox techniques and methods in the history of carpentry and masonry. Finally, the student of such topics would wish to know something of the efficiency and suitability of the constructions, in view of the purposes for which they were designed. Such questions—for which there are, apparently, no ready answers—suggest that here are topics for legitimate historical inquiry, employing such documentation as can be found, into "lost" American architectural history. Once such data have been collected and analyzed, further additions to knowledge could undoubtedly be made from time to time from actual site excavations, in cases in which the sites can be precisely identified.

It is probable that an outline of such lost architectural history would be an addition to knowledge not unworthy of attention, in view of the historic role of the commercial trading post in the first period of exploitation of the natural resources of the West. In the related sphere of the history of the intermingling of peoples of differing cultural origins—American Indian groups and alien Whites, the latter themselves of various national and cultural affiliations—further knowledge of the setting in which some of the initial culture contacts occurred would seem to be an important scholarly endeavor. It is sometimes said that the historian is more often concerned with the person or persons, and the event or events, than with the place or places in which historic events have occurred, and it seems appropriate here to draw attention again to material aspects of the more recent past, toward an understanding of which the archeologist and the historian can still make contributions.

The excavations here reported for site 39ST217 are the first systematic investigations of any site of White origin in the area of the Oahe Reservoir, and much further work remains to be accomplished. Elsewhere in the drainage of the Missouri River, some sites of White origin have received special attention, including both limited documentary research and systematic excavation or testing. (Yet few of the sites thus far studied in any detail have received adequate *prior* documentary investigation, for several reasons.)

Several of the sites to which attention has been given are military rather than commercial in origin, and only a few are those of trading posts, from which directly comparable materials and data are available. Among this small group, work at sites 32ML2 (Forts Berthold I and II) and 32MN1 (Kipp's Post), both in North Dakota, has provided very limited comparative data, not yet published (Smith, MS., and Smith and Woolworth, MS.). Another site of the kind, located in south-central South Dakota within the Fort Randall Reservoir area, is site 39LM57 (Fort Lookout II), where limited excavations were made and have been reported on by Miller (1960), this volume.

It will be apparent that field investigations thus far accomplished at such commercial sites in the drainage are severely limited in number, are separated by considerable distances, and pertain to various parts of the past century. Any broad generalizations from such limited documentary and field data (even if they could be made) would be premature, and further facts are needed, particularly from selected sites likely to produce data useful for comparative study. In short, planned field research is now called for, to expand and extend the limited data now at hand, if real progress is to be made and numerous sites now endangered are to be properly recorded. Such plans would be laid without regard to the artificial geographic limitations of the river-basin salvage program, but with regard to known historical facts instead. This is particularly desirable in view of the fact that some of the key sites (Forts Union, Clark, and Pierre Chouteau) are not within areas in which salvage operations are required or permissible.

Such planned fieldwork, involving sites of White origin and of commercial (or other) character, would take account of various factors important in the history of the trade in the West, particularly temporal and geographic factors. Thus investigations are indicated for sites of posts of the early 19th century, as well as of the late 18th, together with those of later provenience, and the sites selected might well be chosen from strategic different parts of the Missouri valley—e.g., below the mouth of the Kansas River, between the Kansas and the Big Sioux, between the Big Sioux and the Yellowstone, and between the Yellowstone and the Three Forks, in Montana.[4] Proper attention (as has not always been the case in the past) should be given to adequate documentary investigation, wherever this may lead, *in advance* of excavation. The archeologist responsible may sometimes make important additions to knowledge, lacking the guides of thorough documentary research; he is, however, much more likely to make such additions if the indoor work has been completed in advance, preferably under his own eyes.

Attention should be given also, in such planning, to selecting sites for excavation and study that may afford data on operations and activities of both the dominant firm, the American Fur Company (and its successor, the P. Chouteau, Jr., and Company), and the numerous and frequently short-lived opposition firms (e.g., the Columbia; the Harvey, Primeau; and the Papin, Cerré groups), whose activities and operations are even less well recorded in surviving documentary records. And there are other lesser considerations in any such broad campaign of fieldwork; a case in point is that of sites not now formally protected (as are Forts Union and Clark, now in public ownership), but subject to fortuitous natural and manmade destruction.

Any such broadly planned investigation of historic sites, including coordinated excavations and documentary research, even for a limited number of sites, remains to be worked out. The increasingly greater public interest in and awareness of American backgrounds (not least of all, those of the recently settled West), and the increasing use of existing resources of varying quality, such as private and public museums, historic houses, and historical parks and monuments, are noteworthy phenomena. In proper recognition of the value of surviving original and authentic source materials of a physical nature, much more exploitation of them seems justified. The unexcavated site may have sentimental values; the excavated site, properly studied, may provide real additions to knowledge.

Such work could be accomplished through the several State agencies most immediately concerned (perhaps with public or private assistance), particularly State historical bodies and park authorities, which may be able from time to time to sponsor or themselves undertake original site studies in their own areas of special interest. Some efforts of the kind have indeed already been made by such State agencies, though tentatively and hesitatingly, and not perhaps in any instance as a result of coordinated plans for any State, or in proper relation to work in other States. It seems probable that progress could be made with the assistance of various new groups, such as that of the Committee on Historic Sites of the Mississippi Valley Historical Association, a committee primarily of academic historians and representatives of State historical societies, with various regional interests, which has for some years served as advisors for the National Park Service (Region Two), and with the counsel of the National Trust for Historic Preservation.

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[4] It should be mentioned that excavations have been underway for some years at the site of the U.S. military factory, Fort Osage (1808–27), which supplied goods to the Indians of the region of the lower Missouri, but results of this work have not yet appeared in print. These excavations appear to have been subordinated to reconstruction of the post, still underway, and additions to general knowledge from the archeological work may thereby have gone unrecognized.

With the inevitable progress of knowledge of the history of the West, and the increasingly great time interval separating modern times and the first permanent settlements, and with more concerted study of and attention to historic and prehistoric resources of all kinds (a nonrenewable stockpile), it is not difficult to foresee something approaching the planned work here suggested, crossing artificial State lines and properly coordinated with other endeavors elsewhere, as well as balanced with other spheres of interest than original White exploration and settlement alone. Some little thought has already been given to such planned efforts for areas of Colonial settlement in the New World, and comparable endeavors in Western frontier areas will in time be coordinated with them. At the nearer end of the time scale, it can be said that almost nothing is as yet available from actual archeological study of first permanent settlements in the West, those succeeding to the major role once occupied by the commercial trading post, or to the beginnings of modern industry itself. Any such extensions of knowledge of the past are bound to have genuine value, when the work has been done; it is, however, improbable that they will be made without coordinated planning on the part of public and private individuals and groups.

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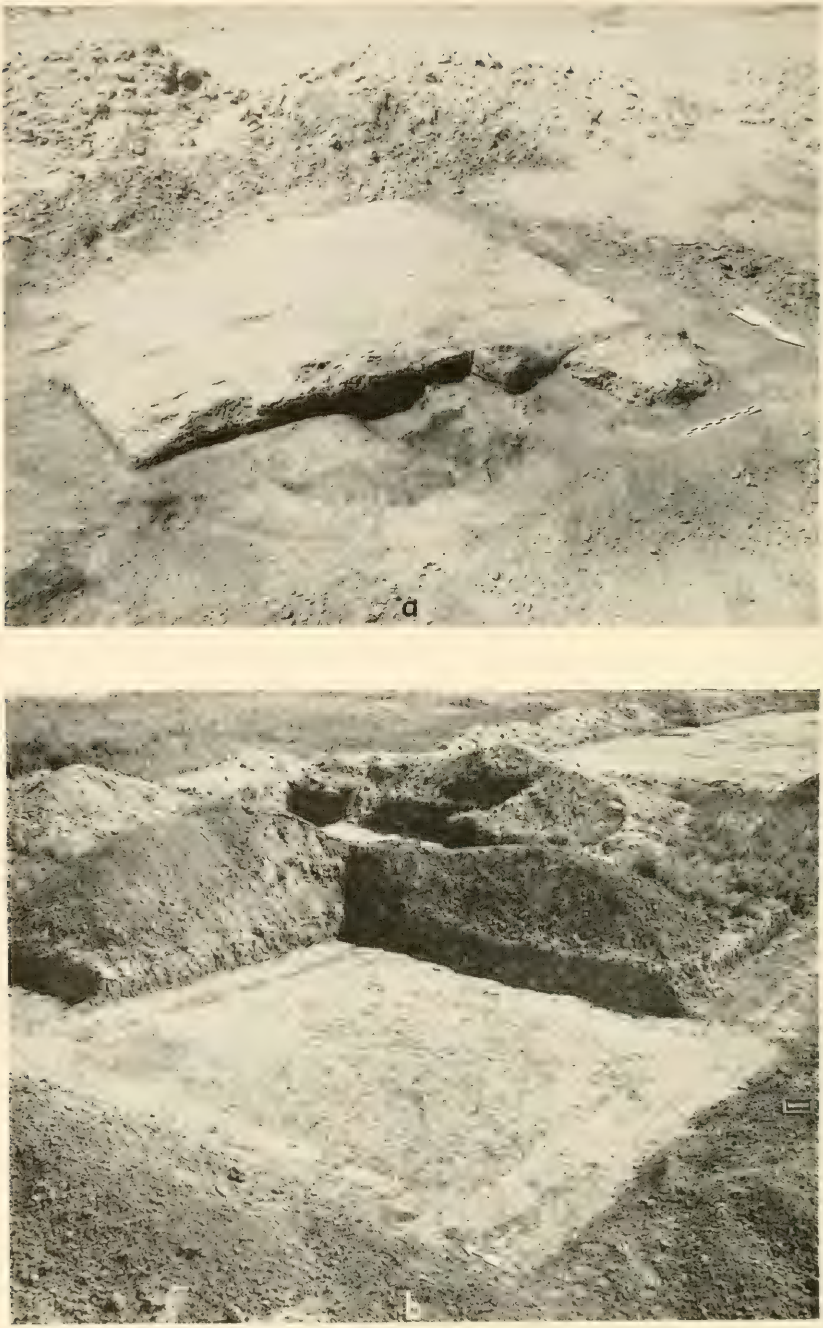
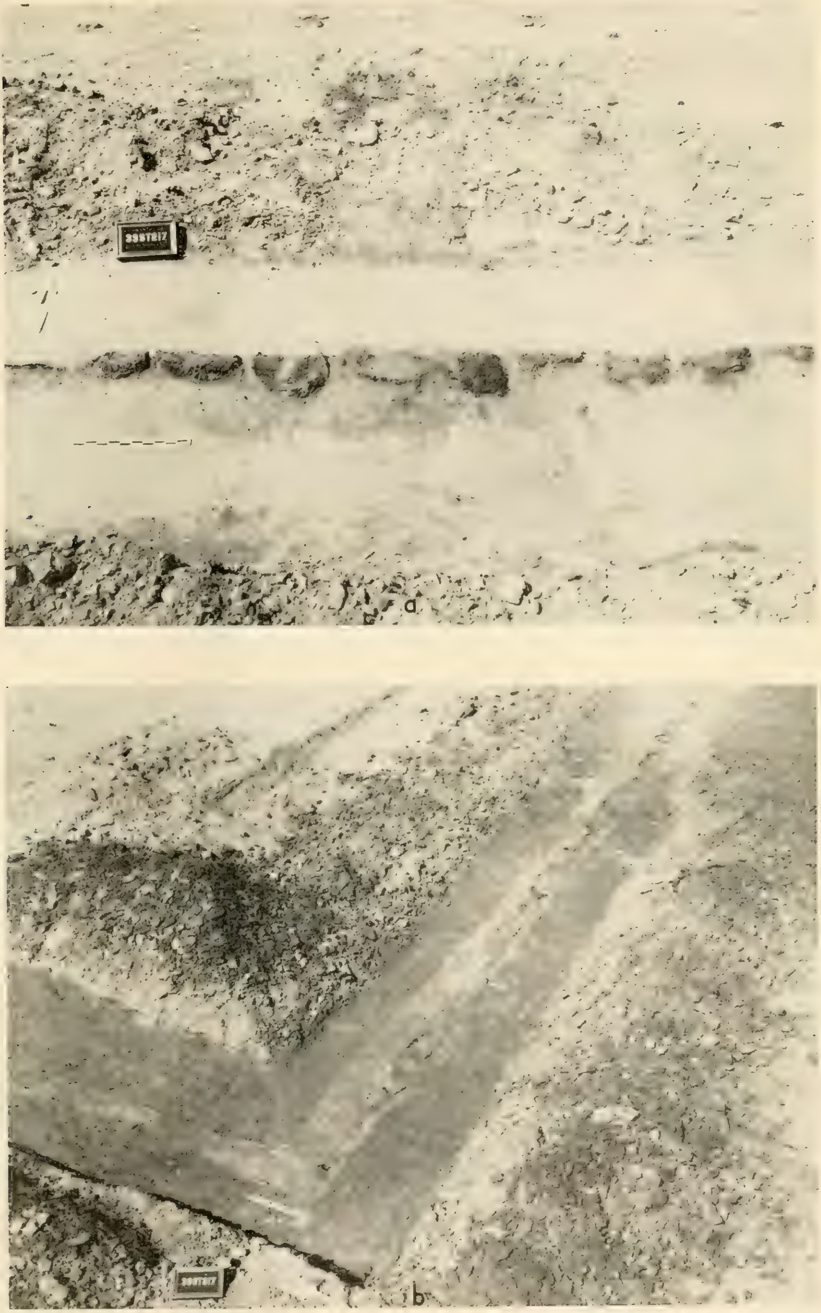
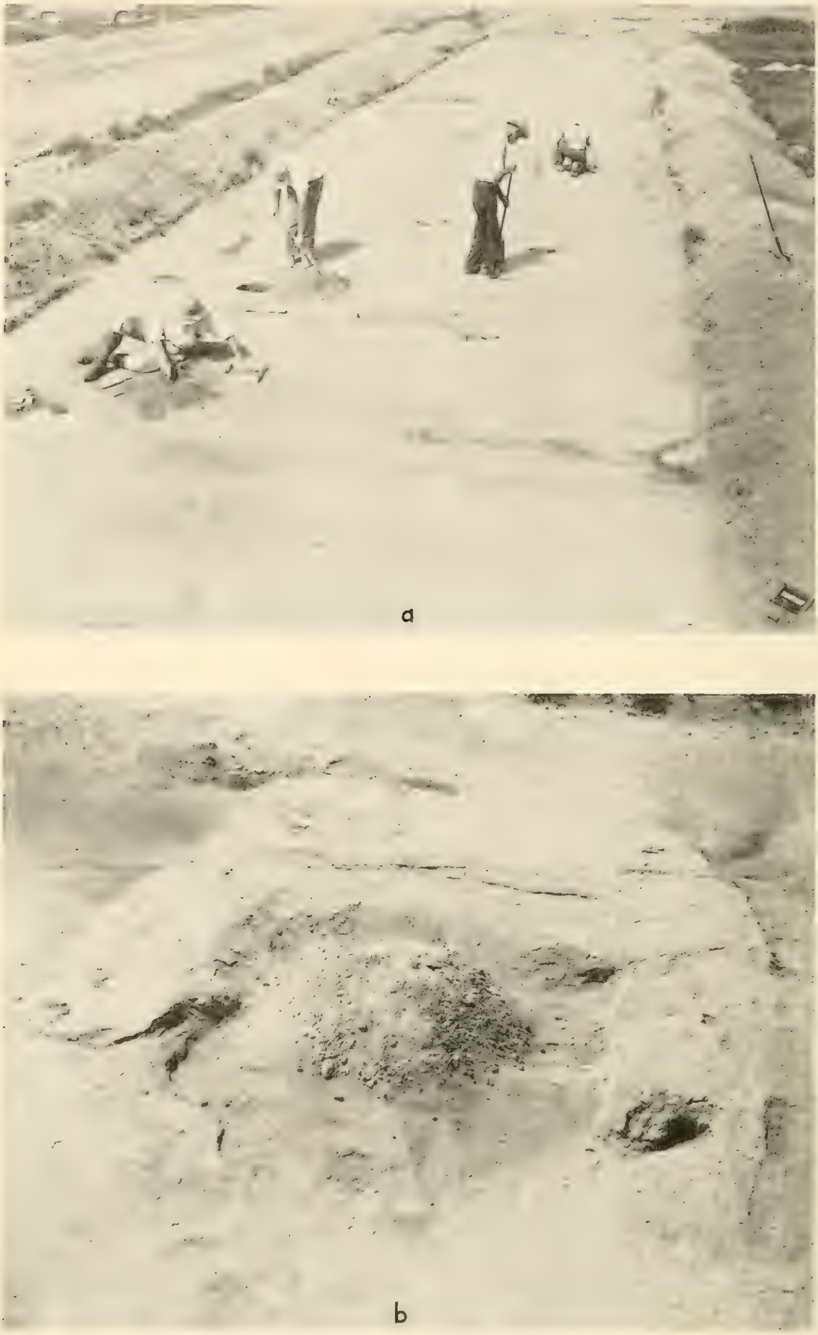
a, Site of Fort Pierre II (39ST217) prior to excavation; cellar pit right center; farm buildings rear. *b*, Blading operations; exploratory trenches (right) mark west stockade line.



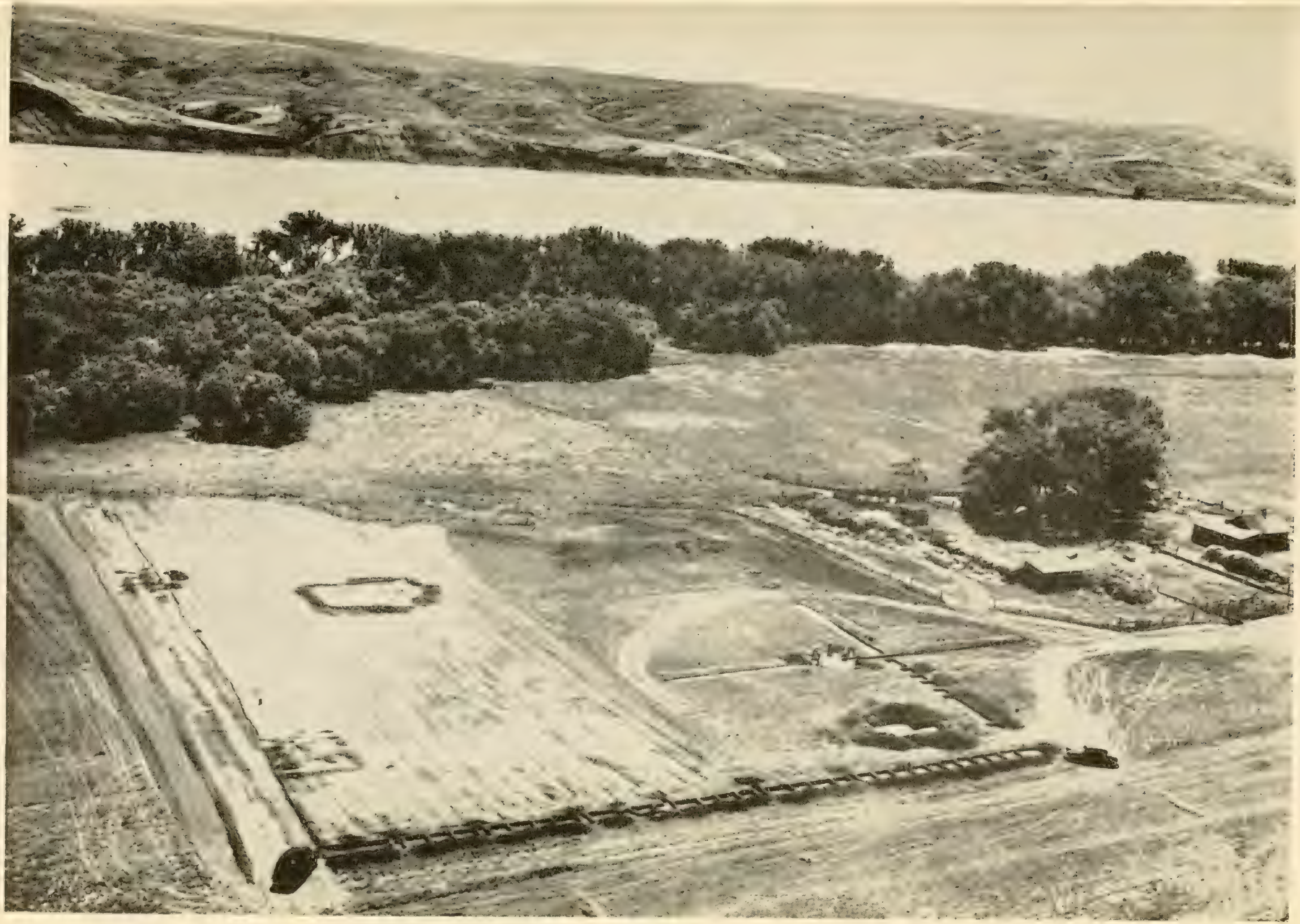
a, Adobe brick chimney base, House site A. *b*, Enclosure (probable site of blockhouse) at southwest angle of stockade.



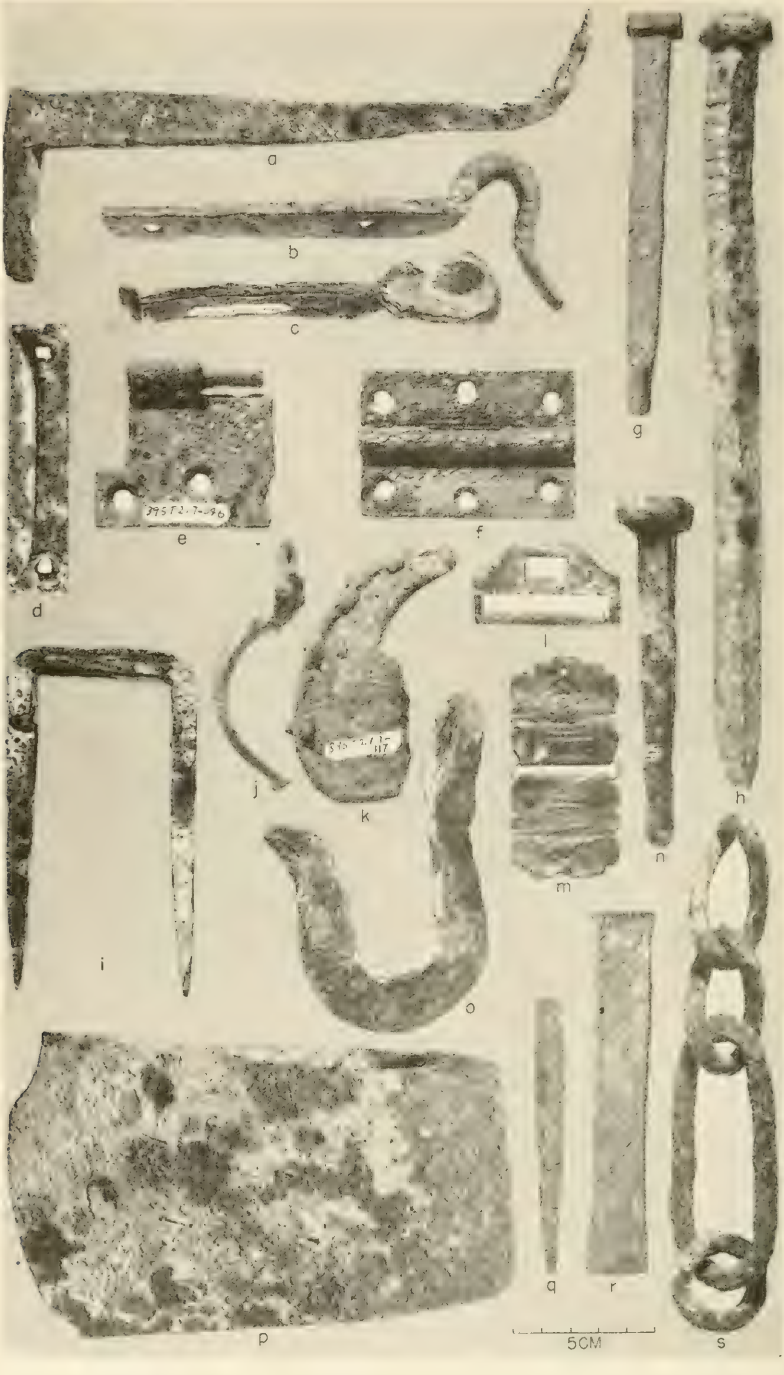
a, Detail of north stockade trench near midpoint. *b*, Northeast angle of stockade trench.



a, House site B, view west. *b*, East fireplace, House site B.



Aerial view, southeast, of site under excavation. (U.S. Army Corps of Engineers photograph.)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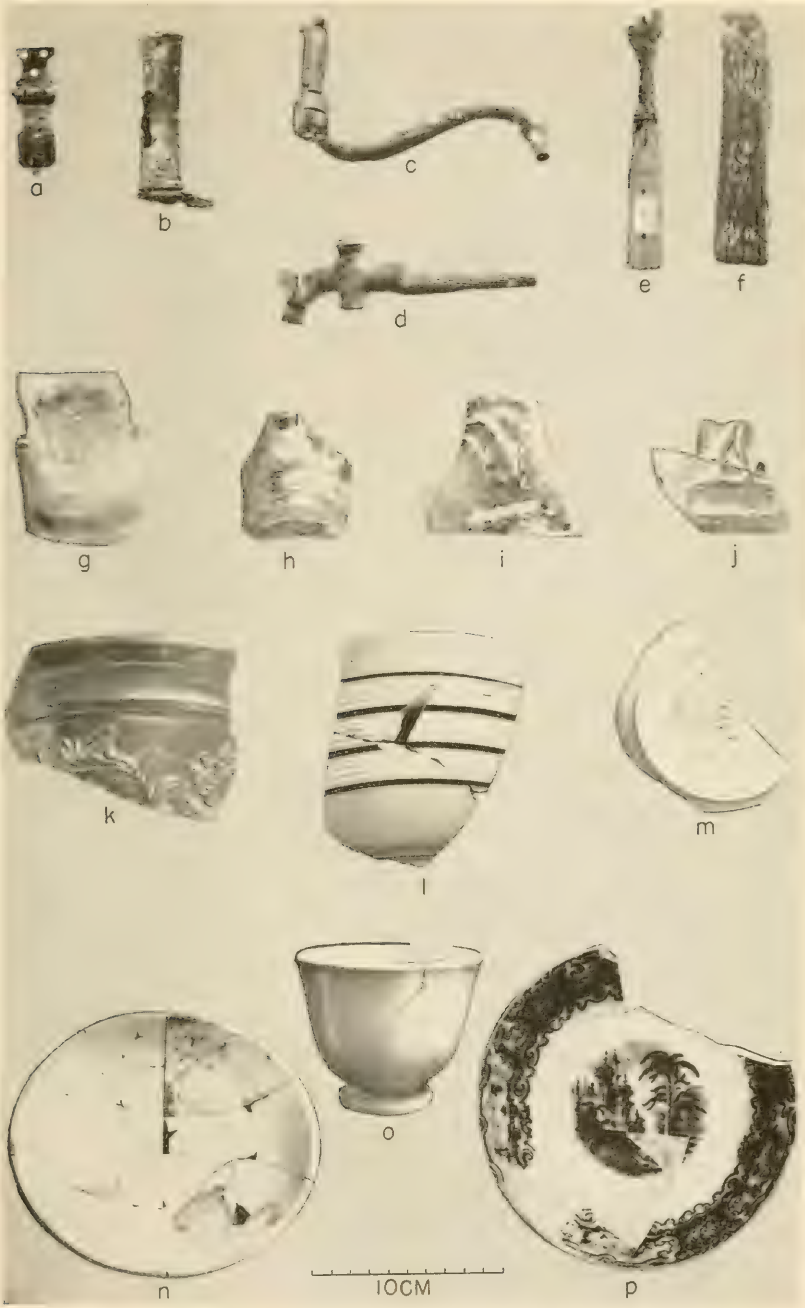
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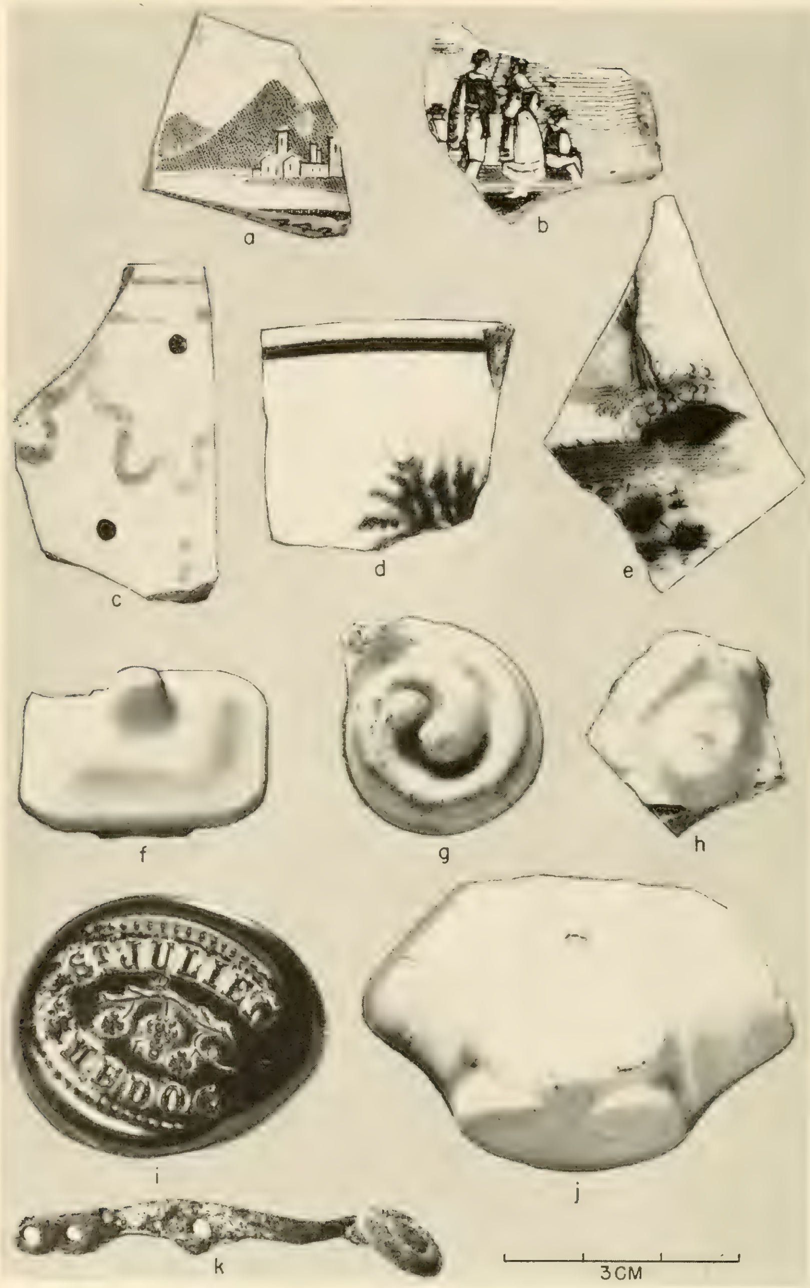
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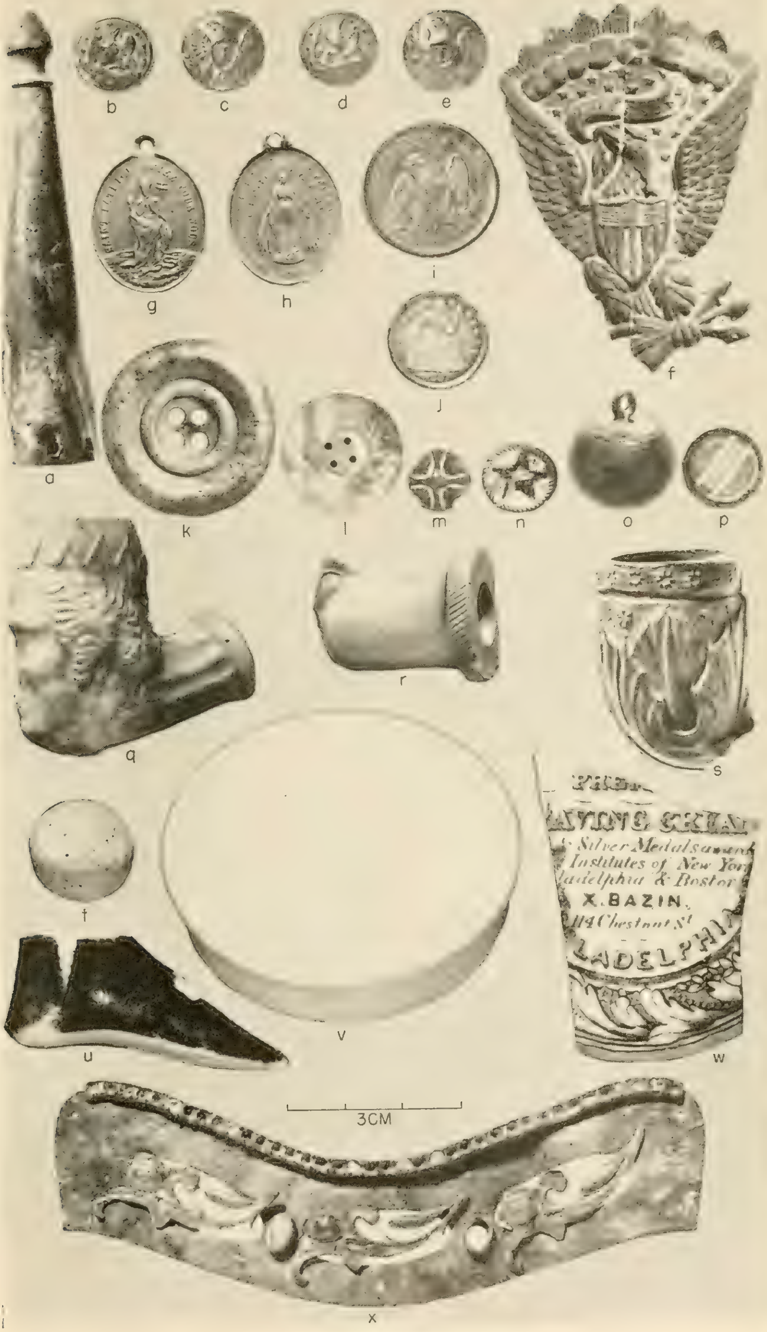
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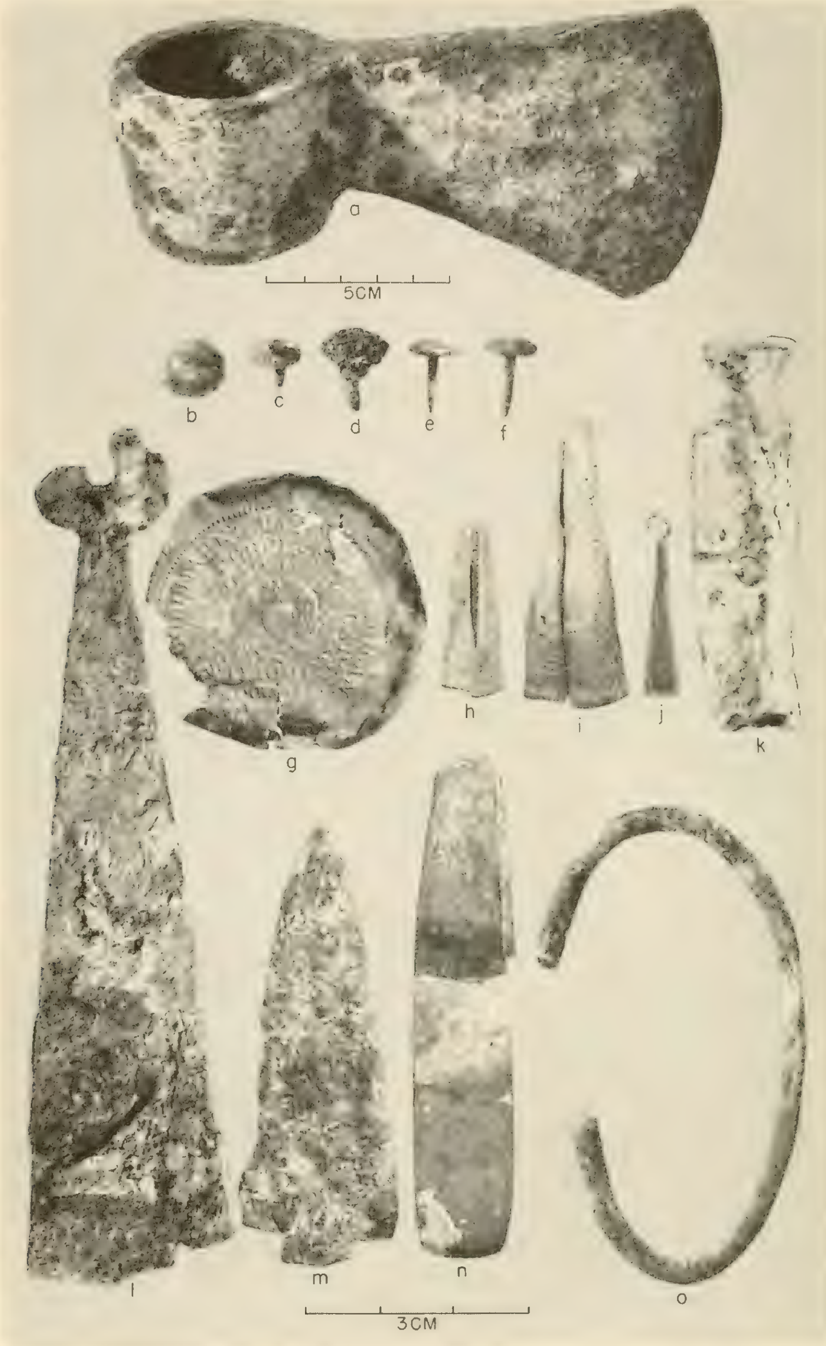
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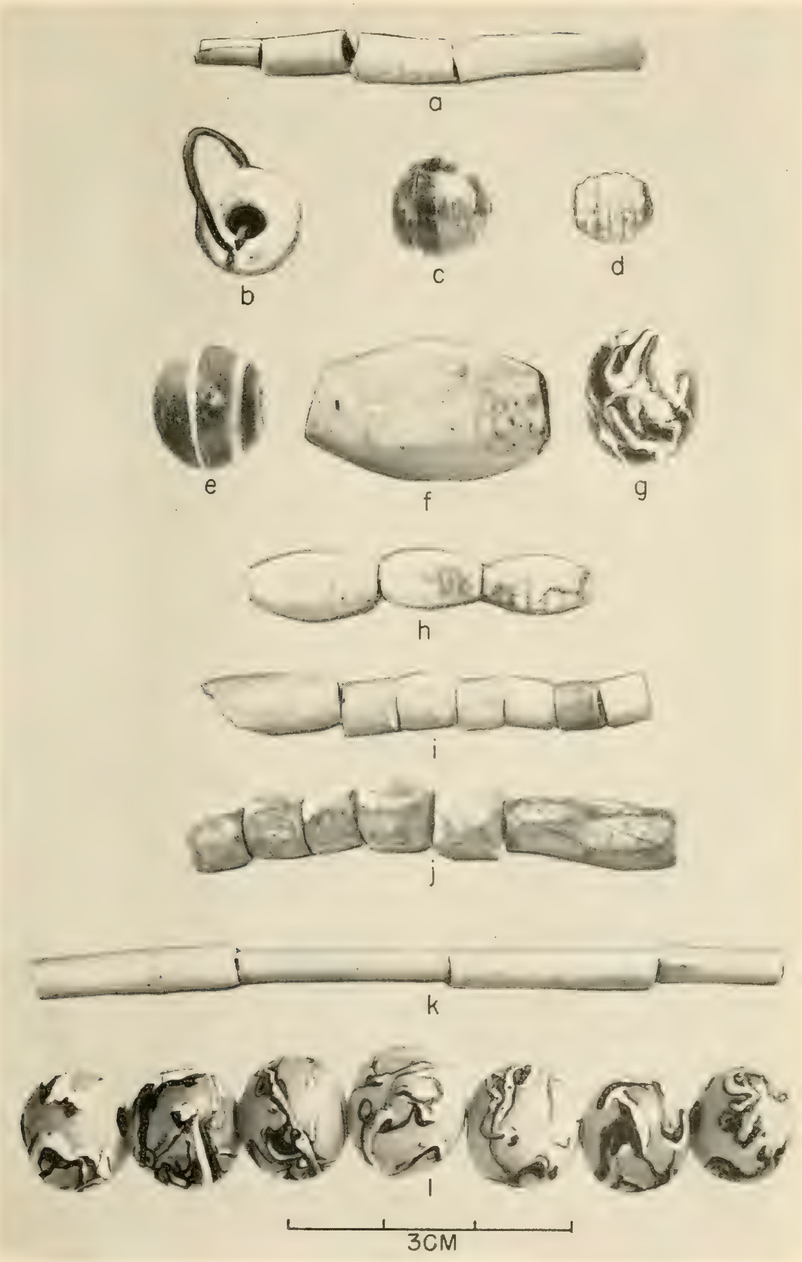
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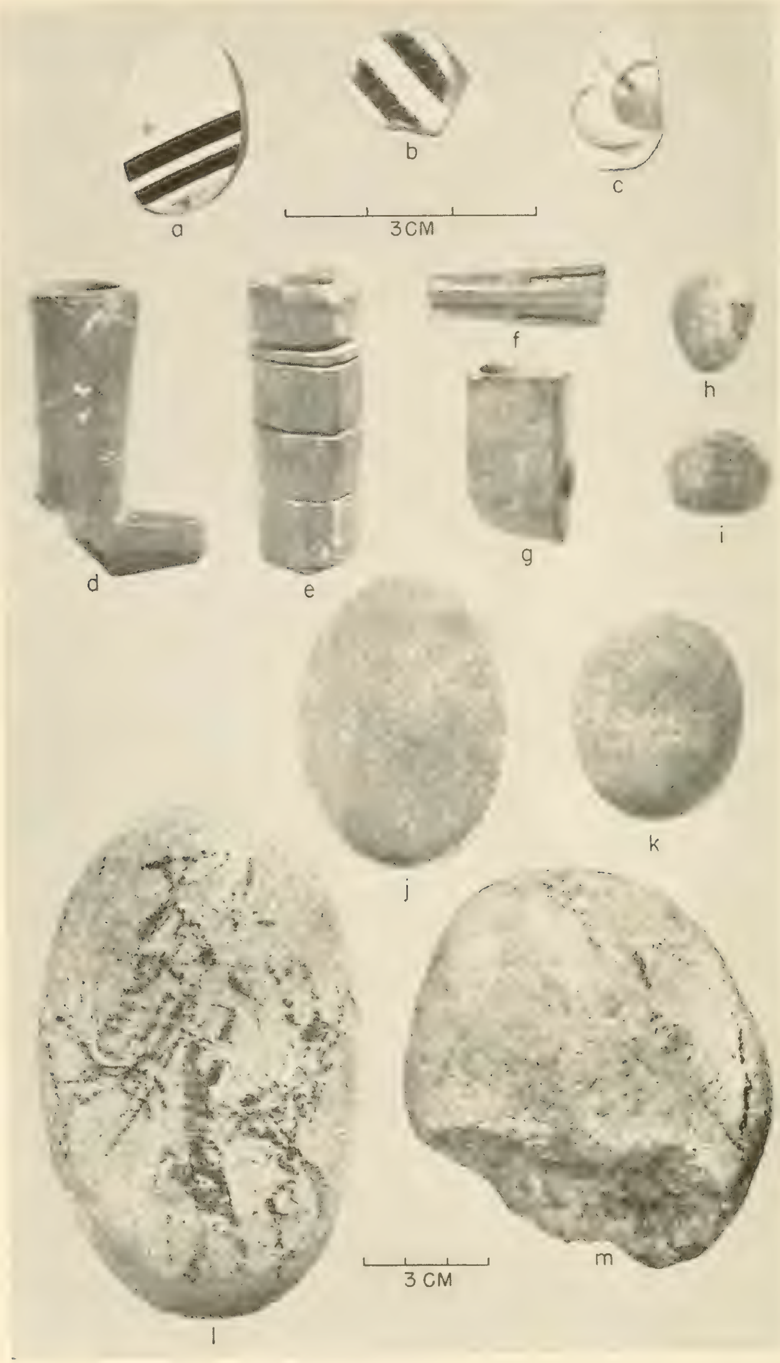
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Artifacts of native significance.

SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 176

River Basin Surveys Papers, No. 19

Archeological Investigations at the Site of Fort Stevenson (32ML1), Garrison Reservoir, North Dakota

By G. HUBERT SMITH

Appendix

By CARLYLE S. SMITH

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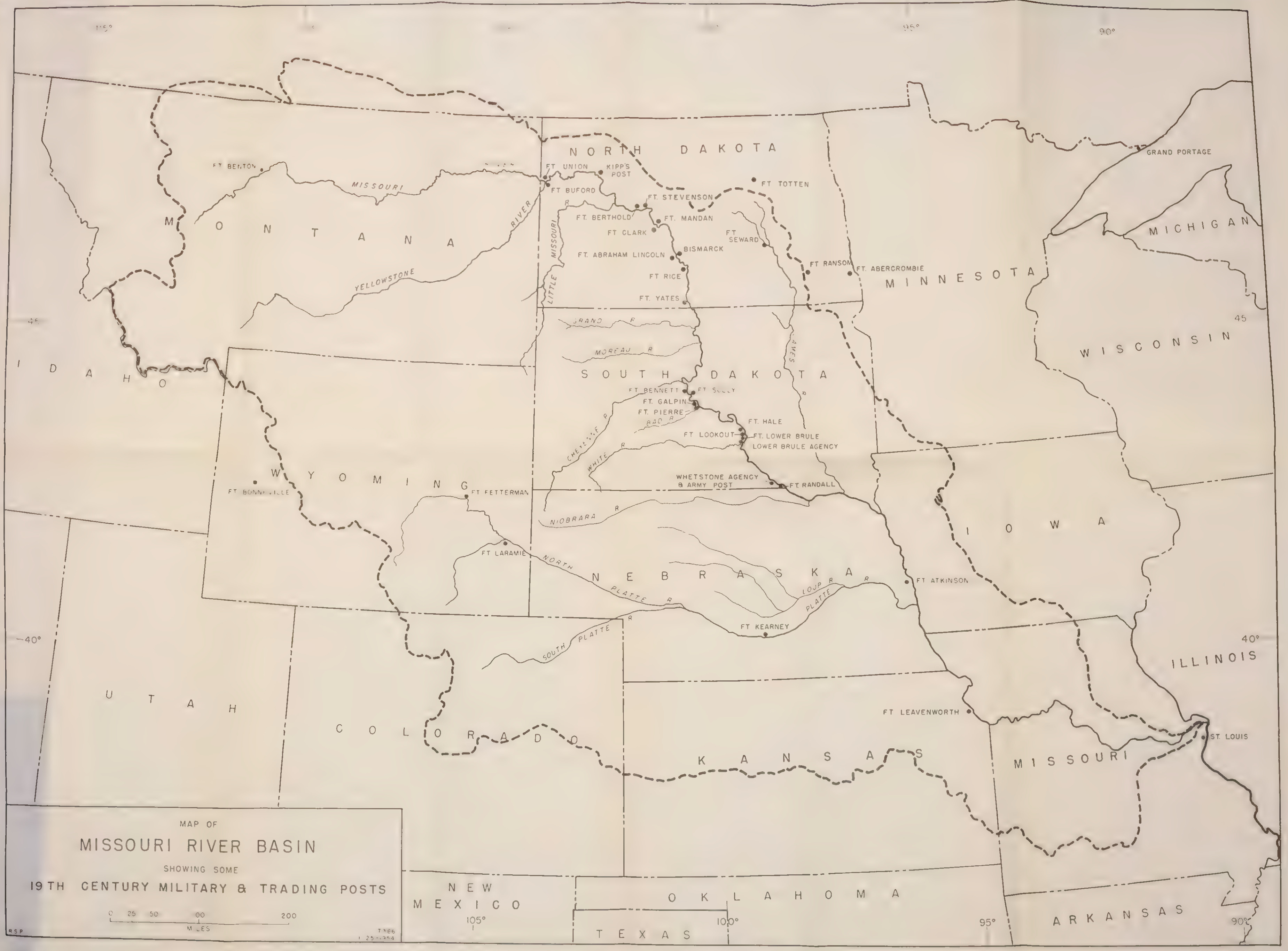
MAP OF
MISSOURI RIVER BASIN
SHOWING SOME
19TH CENTURY MILITARY & TRADING POSTS
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MILES
NORTH DAKOTA
SOUTH DAKOTA
MONTANA
IDAHO
WYOMING
NEBRASKA
COLORADO
UTAH
KANSAS
MISSOURI
IOWA
MINNESOTA
WISCONSIN
MICHIGAN
ILLINOIS
OKLAHOMA
NEW MEXICO
TEXAS
ARKANSAS
FT BENTON
FT UNION
KIPP'S POST
FT BUFORD
FT. STEVENSON
FT TOTTEN
FT. BERTHOLD
FT. MANDAN
FT CLARK
FT SEWARD
BISMARCK
FT. ABRAHAM LINCOLN
FT RICE
FT. YATES
FT RANSOM
FT. ABERCROMBIE
GRAND PORTAGE
FT BENNETT
FT SULLY
FT. GALPIN
FT. PIERRE
FT. HALE
FT LOOKOUT
FT. LOWER BRULE
LOWER BRULE AGENCY
WHETSTONE AGENCY & ARMY POST
FT RANDALL
FT BONNEVILLE
FT FETTERMAN
FT LARAMIE
FT ATKINSON
FT KEARNEY
FT LEAVENWORTH
ST. LOUIS
MISSOURI
RIVER
YELLOWSTONE
LITTLE MISSOURI R
GRAND R
MOREAU R
CHEYENNE R
BAD R
WHITE R
JAMES R
NIOBRARA R
NORTH PLATTE R
SOUTH PLATTE R
LOUP R
PLATTE R
45°
40°
95°
90°
105°
100°

MAP 5.—Map of the Missouri River Basin showing locations of some of the 19th century military and trading posts, especially along the Missouri River in North and South Dakota

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ARCHEOLOGICAL INVESTIGATIONS AT THE SITE OF FORT STEVENSON (32ML1), GARRISON RESERVOIR, NORTH DAKOTA

By G. Hubert Smith

FOREWORD

The Garrison Dam and Reservoir, a Corps of Engineers project, on the Missouri River in west-central North Dakota, has inundated the immediate valley of that river from just below the city of Garrison nearly to the Montana State line. Within the now flooded area were formerly located a large part of the Fort Berthold Indian Reservation, as well as the Fort Berthold Agency town of Elbowoods; the town of Sanish; and the communities of Nishu, Independence, and Shell Creek. There also were the remains of several important 19th-century military and trading posts, many Indian village sites of the past several centuries, and some significant geological outcroppings and fossil localities. Because of this the Garrison Reservoir area was one of major concern in the Inter-Agency Archeological and Paleontological Salvage Program.

The Missouri Basin Project of the Smithsonian Institution began an archeological reconnaissance of the area in 1946. This consisted of a brief visit by Paul L. Cooper and J. Joseph Bauxar, staff archeologists. An intensive archeological reconnaissance of a part of the area was undertaken in 1947 by Marvin F. Kivett, archeologist of the Missouri Basin Project staff (now director, Nebraska State Historical Society Museum). Seventy archeological sites were located. Subsequent field reconnaissance in 1950 and 1951, principally by George Metcalf of the Missouri Basin Project staff (now of the U.S. National Museum staff), located 84 additional archeological sites in the portion of the reservoir's area not previously surveyed. The majority of these sites were of Indian origin, but several were of White settlers, or, as they have been called, historic sites. Paleontological parties examined the area for fossil materials with good results in 1950, 1951, and 1952.

As has been pointed out elsewhere (Mattison, 1951, p. 2), one of the most important sites in the Garrison Reservoir area was that of Fort Stevenson, an American military post of 1867–83, which was used as an Indian school from that date until 1894. When the intensive archeological reconnaissance of this reservoir area was begun in 1947, the site of FortStevenson, in present McLean County, was an obvious point of departure. The site was designated 32ML1, in accordance with the trinomial system of designation employed by the Missouri Basin Project.

Excavation of some of the archeological sites of major importance in the Garrison Reservior area was begun in 1950. In that year a Missouri Basin Project party, under the direction of G. Ellis Burcaw, began excavation of the Rock Village site (32ME15). The same year, a party from the State Historical Society of North Dakota, under the direction of Glenn Kleinsasser began excavation of the Like-a-Fishhook Village site (32ML2).

In 1951 excavation activities in the Garrison Reservoir area were expanded. The 1950 excavations, concerned with the two native earth-lodge village sites of the historic period, were continued by the same agencies under the field direction of Donald D. Hartle and James H. Howard, respectively. After completing the work at the Rock Village site, Hartle and his party began excavation of the Star Village site (32ME16). The same year a party from Montana State University under the direction of Carling Malouf excavated at three sites of Indian provenience (32ME43, 32ME54 and 32ME55). It also became possible, in 1951, to give attention to some of the historic sites, especially Fort Stevenson (32ML1). This site, though primarily of White provenience, had a direct bearing upon the native history of the entire region. Excavations were carried out there by a Missouri Basin Project party under the direction of G. Hubert Smith. Other fieldwork of the 1951 season included testing of several sites of Indian origin and one historic site, that of Kipp's 1826–27 trading post (32MN1) by the Missouri Basin Project reconnaissance party.

In 1952 James H. Howard continued excavations at the Like-a-Fishhook Village site (32ML2) for the State Historical Society of North Dakota. G. Hubert Smith and a Missouri Basin Project party, at the same time, began excavation of another portion of the same site (32ML2), the remains of a trading post known as Fort Berthold II (originally called Fort Atkinson). Donald D. Hartle, with another Missouri Basin Project party, excavated a butte-top village site known as Night-Walker's Butte in the Bull Pasture (32ML39), and tested the smaller site of Grandmother's Lodge (32ME59). Carling Malouf and a party from Montana State University excavated at five sites of Indian provenience (32MN5, 32MN7, 32MN8, 32MN9, and 32MZ1). The work of Montana State University and that of the State Historical Society of North Dakota in 1951 and 1952 were carried out under cooperative agreements with the National Park Service.

Owing to sharp curtailment of funds there was only one small project in the Garrison Reservoir area in 1953. That was the continuation of work at the Grandmother's Lodge site (32ME59) by a small party from the State Historical Society of North Dakota under the direction of Alan R. Woolworth.

During the several years of accelerated field activity, brought about by the emergency situation of dam construction, the Garrison Reservoir area provided much important information on American frontier history, American Indian prehistory, and paleontological distribution of fossil animals. Of these, not the least important is the period of American frontier history. The application of archeological field methods to the study of sites of White provenience such as that of Fort Stevenson is not new in American studies. It has long been realized that broader bases of White history in the New World can often be supplied through site excavations. Notable examples are Jamestown, Va., and Grand Portage, Minn. In one sense, though, the work at Fort Stevenson was a pioneer effort in historical studies on the upper Missouri.

It may, at first consideration, seem a waste of time and money to excavate a site about which contemporary records tell so much. Yet verification of those records for a military post of as much importance as Fort Stevenson is significant, especially when the documentary evidence is materially supplemented by the findings in the excavations, as was the case here. Fort Stevenson had its very reason for existence in the native history of the frontier. Throughout its military use, and its later service as an Indian school, Fort Stevenson continued to reflect some of the effects of groups of cultures in contact. The contact here between Indian cultures—Mandan, Arikara, Hidatsa, Sioux, Cheyenne, and others—and White cultures—traders, explorers, settlers, and military personnel—had begun nearly two centuries before. The last third of the 19th century, when Fort Stevenson was in use, was the climax of this contact period. It is worthy of note that at such a time few artifacts of native origin were in use at this post. It is not without interest, furthermore, that the history of Fort Stevenson is directly connected with the history of the region today, more than half a century after the abandonment of the frontier post. For instance, it was because infantry companies of the United States Army were garrisoned at this place that a nearby stream received the name of Garrison Creek. Subsequently a village established near the headwaters of this creek was also named Garrison. From this community, now a city, the great Garrison Dam and Reservoir take their name.

Mr. Smith's careful analysis of the results of this excavation and his thoroughgoing annotation of the sources and probable developments of specific artifacts and site features make the present paper a worthwhile contribution to the study of frontier history. His use of contemporary accounts to interpret the archeological findings, furthermore, provides additional basic data for the archeologist to employ in interpreting materials from other sites where no contemporary record exists.

January 1954.

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Chief, Missouri Basin Project,
Lincoln, Nebr.

INTRODUCTION

The report that follows is a description of excavations at, and object materials obtained from, the site of the late 19th-century military post of Fort Stevenson, in the Garrison Reservoir area, N. Dak. It is based primarily upon data collected for the Missouri Basin Project, Smithsonian Institution, during the summer of 1951. Other comparative data were gathered from the literature concerning the period, and from excavations at comparable historic sites. A preliminary account of the results of the Fort Stevenson investigations appeared in 1954 (Smith, G. H.).

The archeological work accomplished at the site of Fort Stevenson was possible only through the cooperation of a number of institutions and individuals. Dr. Frank H. H. Roberts, Jr., director of the Bureau of American Ethnology and director of the River Basin Surveys, always in close touch with the work, provided ever helpful supervision. The River Basin Surveys staff in Lincoln exerted every effort, in preparation for the work beforehand and in the routine cataloging, processing, and preparation of the materials after the excavation was finished, as well as in facilitating the work in the field. Paul L. Cooper, George Metcalf, Dean E. Clark, Evelyn B. Stewart, Nathaniel Dewell, Lee G. Madison, and Clara Rehn were especially helpful. Russell Reid and the staff of the State Historical Society of North Dakota assisted immeasurably in providing access to historical documents and in many other ways. The staff of the Corps of Engineers, Garrison District, particularly Col. R. J. B. Page, was always cooperative and provided real help and encouragement. The staff of the Region Two Office of the National Park Service, especially Merrill J. Mattes, Ray H. Mattison, and Gordon C. Baldwin, aided in field activities and documentary research. Dr. John W. Robinson, formerly State Veterinarian of North Dakota, constantly provided helpful advice, personal recollections, and unpublished documents. Dr. Carlyle S. Smith of the Museum of Natural History, University of Kansas, furnished welcome expert advice on firearms, and gave permission for republication of his study of materials of this nature from the site, as an appendix to this paper. The excavation party under my direction included Byron Houseknecht, assistant, and George Metcalf, Lee G. Madison, Loniel B. Bagby, Jr., Hugh Sampath, and students of the Riverdale High School, all of whom worked faithfully through the field season.

To all of these persons and the institutions they represent I am most deeply grateful. My sincere thanks go to them and to others who have helped in less obvious but equally important ways to make this report possible.

GENERAL OBSERVATIONS

The general history of Fort Stevenson, occupied as a military post from June 1867 until August 1883 and as an Indian school from that date until 1894 (pl. 33), has been recounted elsewhere (Mattison, 1951). That account, based on official records of the post now preserved in the National Archives, devotes special attention to the history of construction of the post and to its physical structures. In the following record of excavations conducted from June to October 1951 at the site of the former post, frequent reference is made to these specific data from the documentary record, particularly at points at which excavation supplemented or permitted correction of the contemporary record. In general it may be said that the excavations, though confined to selected building-site units, and in no sense exhaustive, confirmed the data preserved in the post records. Few errors were noted in these records, so far as they could be verified on the ground.

The general setting in which Fort Stevenson was established has been treated in the general history referred to, and elsewhere (Kivett, 1948, pp. 4–5, comments on the physiography of the region). Attention may be called to the fact that the geographical location of the post given on the ground plan, traced December 10, 1879, is in error. (Photostats of original in Missouri Basin Project and National Park Service Region Two files. The plan is retraced, for the sake of legibility, but with minor errors, to accompany Mattison, 1951, opp. p. 28.) The true location of the post was approximately 47°34′ N., 101°29′ W. (U.S. Army Corps of Engineers, sheet No. 143, 1943 a). It may also be noted that although the parade ground and sites of adjacent buildings of the post were in the NE¼ sec. 10, T. 147 N., R. 85 W., as stated (Mattison, 1951, p. 2), other closely related parts of the whole lay in the adjacent NW¼ of section 11 of this township and range, including the sites of the warehouse area, the steamboat landing, and the temporary camp used during the early summer of 1867 (U.S. Army Corps of Engineers, sheet No. 147, 1943 a).

The site selected in 1867 for the permanent installation of the post was a level terrace, a segment of the first bench of the valley of the Missouri River, rising above level bottom lands on the north side of the main channel of the stream, which at that point flowed eastward (map 6; pl. 31). The elevation of the parade ground was approximately 1,720 feet above sea level (U.S. Army Corps of Engineers, sheets Nos. 143, 147, 1943 a). Opposite the site of the fort, the elevation of the main channel was 1,690 feet. Of this interval of 30 feet, approximately 20 occurred at the edge of the terrace, which there rose from the bottom land at an angle of approximately 45°. That bank had been somewhat eroded, and the surface of the slope showed gravel exposures of the terrace subsoil. Various cultural materials were found on this bank; some apparently belonging to the period during which the site was in military use. Trash and disposal areas were sought for there, but none of importance was found. Such deposits may have been obscured by bank erosion. Little evidence was seen of the effects of erosion elsewhere at the site of the post. In general, except for areas subsequently brought under cultivation, such as the parade ground, the site appeared to have been well covered with vegetation in recent years.

The terrace upon which Fort Stevenson stood was actually a kind of island lying roughly parallel to the river, and rising very slightly to the west of the parade ground area. It was, in 1951, almost wholly under cultivation. It was bounded on the south by the bottom land of the Missouri and on the north by an alkaline slough which drained into Garrison Creek, and was useful only as hay land. On the east the terrace was cut by Garrison Creek, on the west by Douglas Creek.

On the ground plan of Fort Stevenson of 1879, previously mentioned, a map of the military reservation appears as an insert, the original of which was made in 1870 (Mattison, 1951, p. 4). This map records that in 1870, near the beginning of the military use of this region, Garrison and Douglas Creeks were separate, each flowing directly into the Missouri. This was not the case in 1951, and an enlargement of the bottom land between the first terrace and the main channel—probably the result of building up of bars at the mouth of Douglas Creek, the larger of the two streams, as well as of silting up of the whole valley—had permitted Douglas Creek to capture Garrison Creek (pl. 34, *b*; map 6). This change in the relationship of the two streams apparently occurred at some period between 1870 and 1891, at which later date the Missouri River Survey maps were prepared, since the latter maps show the terrain at this point much as it was until covered by the waters of the reservoir (U.S. Army, Chief of Engi-

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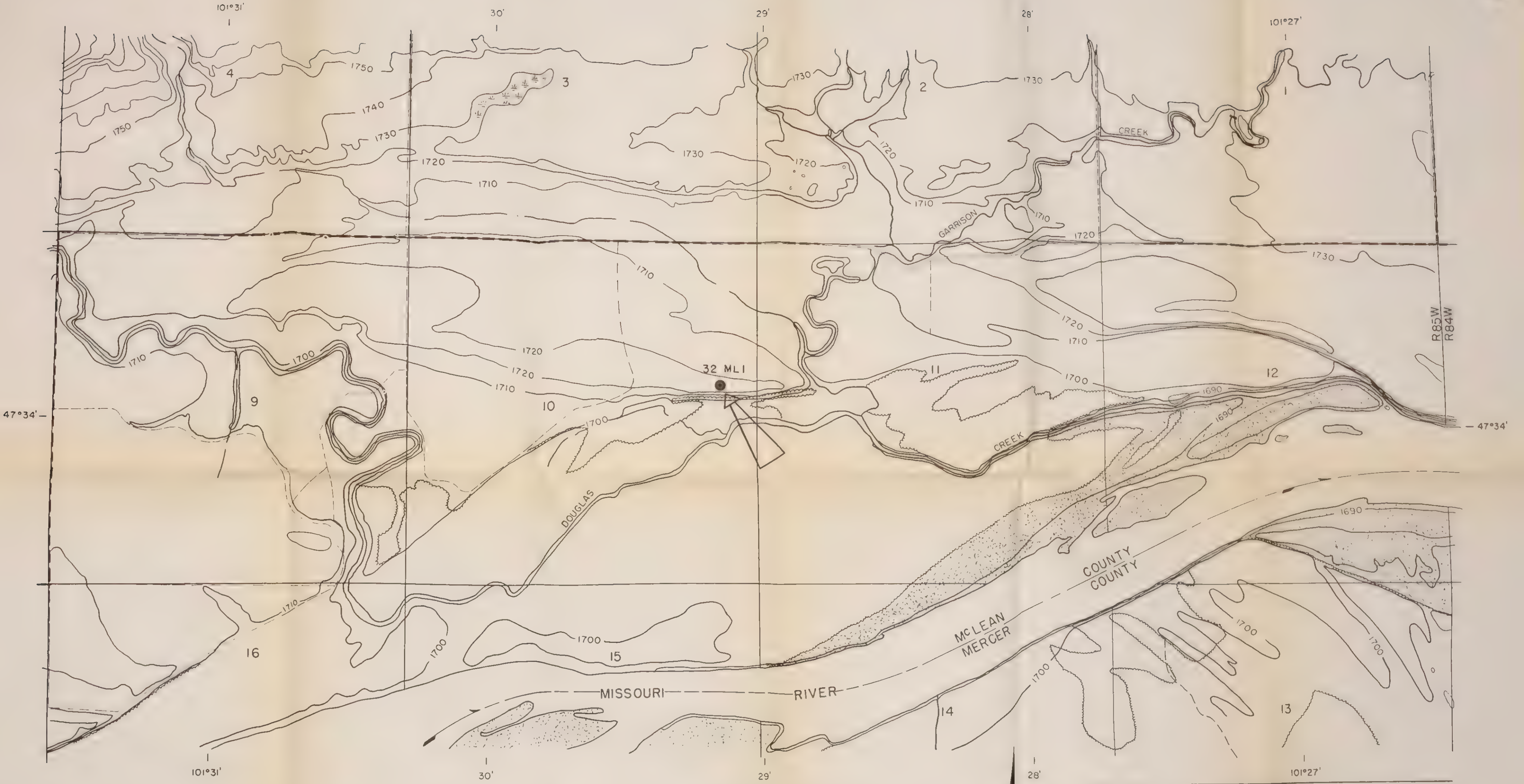
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R84W
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9
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DOUGLAS
CREEK
MISSOURI
RIVER
COUNTY
COUNTY
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MERCER
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15
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101°31'
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28'
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SMITHSONIAN INSTITUTION
RIVER BASIN SURVEYS MISSOURI BASIN PROJECT

VICINITY MAP OF FT. STEVENSON (32ML1)

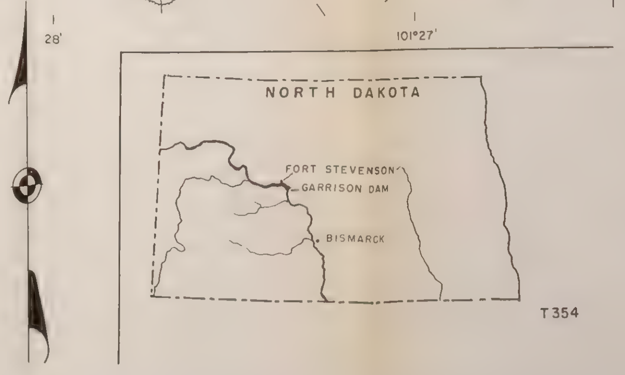
ADAPTED FROM
U. S. CORPS OF ENGINEERS
MAP OF GARRISON RESERVOIR
(SHEETS 143 & 147, JULY, 1943)

—LEGEND—
DIRT ROAD ════
TRAIL - - - - -

0 1000 2000 3000 4000
SCALE IN FEET

LEGEND

-··-··- INTERMITTENT STREAM
WOODED LAND
GRASSED LAND
⚶ MARSH


NORTH DAKOTA
FORT STEVENSON
GARRISON DAM
BISMARCK

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Map 6.—Map of the vicinity of Fort Stevenson (32ML1) showing relationship of the site to the Missouri River and to Douglas Creek

neers, 1892). Inspection of an aerial photograph of that portion of the river, taken April 4, 1943, suggests that the river, since 1870, had retreated about one-half mile at this point, leaving new land not then in existence (U.S. Army Corps of Engineers, MRD–1–89, 1943 b). This topographic change in the vicinity of Fort Stevenson was of historical importance because of its bearing on the problem of the location of the original warehouse and steamboat landing, not precisely recorded, so far as is known.

The recent bottom land between the first terrace and the main channel of the Missouri was well timbered with cottonwood and ash, and a few small open areas adjacent to the terrace were in use as hay land. That this bottom land, then probably narrower than in 1951, was not well timbered in 1867 is clear from the fact that it was then necessary to obtain suitable saw logs for use at the new post from the opposite (south) side of the river (Mattison, 1951, p. 27). The gathering of fuel in the immediate vicinity of the post must soon have stripped it of timber resources, and it is probable that still earlier search for fuel and building materials, by Indians and by "woodhawks" who supplied steamboats with fuel, had begun this denuding of the bottom lands. Official records show that cutting of timber on the military and Indian reservations was a source of conflict between the military and the Indians, as well as civilian white persons (ibid., p. 27).

Evidence of the fact that these bottom lands were largely bare of timber in the late 1860's, and that a full view of the river itself could be had from the post at that time, is contained in the journal of General de Trobriand, then commandant, who mentions the passage on the river of war parties of Indians in bullboats, and of miners from Montana in Mackinaw boats (de Trobriand, 1951, pp. 131–133, 150). These parties were seen on the river from the temporary camp area immmediately east of the site of the permanent post, whereas no part of the main channel could be seen in 1951 from the site of Fort Stevenson, because of the widening of the bottom land and growth of new timber in recent years.

Only one reference to extreme high water in the Missouri near Fort Stevenson has been encountered, though spring flood waters frequently inundated the bottom lands near the post (ibid., p. 254; account of the breakup of the ice on March 25, 1868). It was recorded that in 1866 flood waters approached within 12 feet of the site of the future post. Such a rise would mean that the level of the main channel rose approximately 18 feet, opposite the post. Except in periods of such extreme flooding or of excessive precipitation, however, the site of the post was probably a very suitable one, affording good surface and subsoil drainage. The post surgeon stated in 1875 that "the natural drainage is perfectly efficient, hence there are no artificial drains, and none [are] needed" (Matthews, 1875, p. 440). The soils at the site were readily pervious, and it was observed that even after heavy rains, as in June 1951, water remained standing on the surface for only a few hours at most. It was quite a different case with the gumbo soil at a lower elevation nearby, which retained water for days and even weeks, and which must have given trouble for wagons, just as it did in recent years for motor vehicles, even on graded roads.

Several years apparently elapsed, after the fort was built, before drive wells were put down, and in the meantime water for drinking and other purposes was obtained from the Missouri itself (Matthews, 1875, p. 440). A photograph taken at Fort Stevenson, probably about 1870, shows a group of enlisted men and civilian mule drivers on such a water detail (pl. 32). It is not surprising that medical records of the post show a high incidence of dysentery. The use of river water for drinking, and the fact that the transportation of food supplies was often badly interrupted during winter months are sufficient explanation (Mattison, 1951, p. 22). By the time of the inspection report of 1879, drive wells were in operation and that water source must have been an improvement. Yet those wells were located less than a hundred feet from common latrines or "sinks," and the wells are reported to have been no more than 10 feet in depth below the floor of the pump house (ibid., p. 34). A further possible source of water was various springs in the vicinity, but water from such springs was apparently disliked, and was referred to as "unpalatable" (Matthews, 1875, p. 440).

In the immediate vicinity of the post, prairie hay lands doubtless originally supplied all grazing needs. It was, however, noted in 1875 that a wide extent of country had to be searched to obtain sufficient hay for the post, and it was thought that this supply would become even shorter (ibid., p. 438). The map of the reservation of 1870 (traced 1879), previously mentioned, shows a post garden on Douglas Creek, west of the fort. It was a policy of the War Department at this period to furnish part of the subsistence for these posts by means of such gardens, operated by post personnel. This garden was irrigated by hand during the dry season of the summer. It contained between four and five acres of ground, and produced peas, beans, and lettuce well. Potatoes and onions are said to have been produced in quantities sufficient to meet the needs of the post for the greater part of the year, while turnips, beets, cabbages, and the like were raised in smaller quantities (ibid., p. 440).

At some period during the military occupation of Fort Stevenson, tree planting had been attempted about the parade ground. Photographs taken during that period and subsequently show the position and size of several such trees in front of the officers' quarters (photographs in State Historical Society of North Dakota). The remnants of one of the trees that had stood before the South Officers' Quarters survived in 1951. It was an ash, as presumably were the others appearing in the photographs. The trunk of this tree was dead, but suckers from the base were still growing. Sections of the main trunk were collected. These trees had probably been transplanted as saplings from the adjacent bottom lands. Their size at that time, or the precise date of transplanting, is not known, but it must have occurred soon after the post was completed, probably in the early 1870's, though there is no mention of tree planting in the report of 1875 (Matthews, 1875). One of the photographs referred to above, said to have been taken in 1879, shows these trees in healthy condition, and in this view they appear to have been in place for several years. It is probable that these trees would at least at first have been well cared for and frequently watered after transplanting.

Construction materials locally available for use in building the post, and the presence near the fort of lignite coal, which was used to supplement wood for fuel, are of special interest. The map of the reservation (1870) shows the location of coal north of the post, at the edge of the second bench and a road leading to the mine from the fort. A mine in that location was still worked in recent years, for local use. Traces of the use of lignite, in accumulations of weathered coal and lenses of coal ash, were found in excavation at the fort site. Of this lignite deposit, de Trobriand (1951) in 1867 stated that it was necessary only to scoop up the coal, which was exposed on the surface. It was also extracted in chunks with a pick, and was said to be of excellent quality and very pure, burning easily and completely consuming into cinders (ibid., p. 159). Matthews also mentioned the quality of the fuel, though stating that it burned rapidly and disintegrated upon exposure to the air (cited by Kane, ed., in de Trobriand, 1951, p. 159 n.). Another military visitor of this period, Bvt. Maj. C. W. Howell of the Corps of Engineers, also reported that coal was plentiful in the hills in the neighborhood of the post, but that it was considered by the officers to be of poor quality. It had been used in heating stoves, though it did not give entire satisfaction, and had also been used in the blacksmith shop, though it there failed to afford a good welding heat (Howell, 1908, p. 400).

The source of timbers for construction at Fort Stevenson, as well as of fuel needed, is recorded in part in de Trobriand's journal (de Trobriand, 1951, p. 304). In June 1868, a contract was awarded for timbers and firewood, and it is stated that it was even then necessary to go as far as 35 or 40 miles from the post to obtain logs of suitable dimensions. These logs were to be at least 16 inches in diameter, and 25 feet in length. The contract also called for some twelve hundred cords of firewood. It seems clear that the first lumbering activities on the south side of the Missouri during the preceding year had rapidly exhausted the timber resources available for building purposes.

Of local materials employed at Fort Stevenson for construction purposes, none is more clearly illustrated in the excavations than the extensive use of field stone for masonry foundations, still largely preserved in place. No quarry rock was available in the vicinity, and most of the stones used were probably found on the surface of the prairies, derived from glacial drift and river deposits. De Trobriand speaks of rock having been brought from the bluffs 1½ or 2 miles away—presumably the highest bench away from the river (ibid., pp. 42, 346). The boulders used, so far as could be seen during the investigations, were of suitable size for carrying and handling, and many wearisome wagonloads must have been brought in by soldier details. Civilian masons were apparently responsible for the stone masonry, as well as for other construction here. Soldiers also assisted from time to time in actual construction activities (ibid., pp. 43, 158).

A particularly interesting use of local materials for construction purposes was that of clays employed with prairie grasses in the manufacture of adobe bricks. According to local tradition these bricks were made by soldiers working under the direction of an Indian woman known as "Indian Mary" (information from Dr. Robinson; his authority was persons who had lived at the fort). The precise source of clays used in making these bricks is not known, but it was probably in the immediate vicinity of the brickyard which, in turn, lay between the landing and the temporary camp (de Trobriand, 1951, p. 43). The yard was, therefore, near the point at which Garrison Creek entered the recent river bottom land, about one-quarter mile east of the parade ground of the permanent post.

The use of adobe clays for adobe brickmaking elsewhere on the upper Missouri is not unknown, but it would be of interest to know how adobe bricks came to be made and used in military buildings here, in preference to other possible types of construction, at a point far distant from the adobe-brick region proper in the Southwest. It would also be of interest to know how "Indian Mary" became acquainted with the process of adobe-brick manufacture and just what her background had been. The adobe-brick tradition does not seem to have persisted in the architecture of this region of the upper Missouri, but was succeeded by that of the sod house and other styles, in the period of permanent settlement of the region.

Adobe bricks were, it is true, used at numerous other military posts in the West during the 19th century. An example is Fort Laramie, established in 1849, but that post was some four hundred miles south and west of Fort Stevenson. The adobe-brick tradition at Fort Laramie had, furthermore, been introduced during a previous period, when the region at the mouth of the Laramie River was the site of major fur posts. The direct connection of the adobe-brick architectural tradition at that place with that of the Southwest is revealed by the fact that Southwestern labor is said to have been employed in making and using adobes at least as early as 1841, in building Fort John, which in 1849 became the military Fort Laramie (Hafen and Young, 1938, p. 83, quoting John C. Fremont). In the case of both fur-trade structures and private buildings of the military period at Fort Laramie, such as the sutler's store, adobe bricks were used in true masonry. This was also the case with certain of the lesser military buildings, such as the sets of officers' quarters on the west side of the parade ground. In the case of "Old Bedlam," an officers' quarters at Fort Laramie begun in 1849, adobe brick were also used, but only as packing between the timbers of the frame, probably to serve as insulation.

The general history of architecture of western military posts of the 19th century has apparently not yet been given special study. It is known that the original construction at Fort Buford, a military post established in 1866 near the older Fort Union of the fur trade, was also of adobe-brick masonry, and by 1871 efforts had been made to replace the adobe brick. As late as 1875, however, numerous original buildings of this style were still in use at Fort Buford (Mattison, 1955, p. 61). Though there appears to be a general tradition of the use of adobe brick at these posts in the late 1860's, the details are obscure. The use of such materials in the construction of Fort Stevenson may, however, be related directly to a tradition established on the upper Missouri itself during the preceding period of the fur trade.

Although trading posts on the upper Missouri, as elsewhere outside the Southwest, were primarily timber structures (whether or not palisaded), adobe mud and doubtless occasionally even adobe brick were also employed. It has been stated that the few trading posts built of adobe were the exception, timber construction having been the most typical in the western United States (Chittenden, 1954, vol. 1, p. 45). Some evidence on the matter is available for the portions of the upper Missouri in question.

The earlier trading posts of Fort Berthold (ca. 1845 ff.) and its competitor Fort Atkinson (ca. 1858 ff., subsequently known as Fort Berthold; both a part of 32ML2) were timber structures, as were Fort Clark (1831 ff.), Fort Union (1828 ff.), and the still earlier post of James Kipp (32MN1), at the mouth of the White Earth River (1826 ff.). So also was Fort Mandan, in which Lewis and Clark had wintered in 1804–5 with the Mandan Indians. Test excavations at the site of Kipp's post made in October 1951, by the Missouri Basin Project demonstrated that this post had been enclosed with a stockade, and that the stockade and interior buildings had been damaged by fire. This fire had preserved clear evidence, in burned lumps of chinking, of the use of adobe mud. Similar evidence is doubtless preserved at the sites of other early fur posts in this region, and at least one post, Fort Benton (1847 ff.), originally of timber, was rebuilt at some period in the 1850's with adobe-brick masonry.

All of the earlier trading posts of the upper Missouri were built, as was Fort John (which became Fort Laramie), by the American Fur Company or one of its various branches or offshoots, or by the numerous opposition companies, and a fur-trade expression, "dobies," preserves a memory of the use of adobe in one form or another in trading-post buildings. The artist, Rudolph Friederich Kurz, recorded in 1851 that Fort William (perhaps identical with the post known as Fort Mortimer), the opposition post near Fort Union at the mouth of the Yellowstone, was built of sun-dried clay, referring to chinking or plastering of the timbers, or to the use of actual adobe brick in masonry. Hence, he says, the men from this post were called "dobies," the word derived from adobe, itself a Spanish-American word (Kurz, 1937, p. 138 n. and pl. 6, top; Mathews, 1951, vol. 1, p. 9). The word was also frequently applied to the brick themselves (Hafen and Young, 1938, p. 101, quoting an emigrant description of Fort Laramie, 1843: "dobies (unburnt bricks)"). Further evidence of the use of local adobe clays in the construction of various trading posts, for chinking and plastering, and occasionally for adobe-brick manufacture and use, is doubtless available.

In connection with the matter of the use of adobe bricks of local manufacture in the construction of Fort Stevenson in 1867, the plan of the whole post is also of special interest. At most western posts of the 19th century, the arrangement of units of the whole, the buildings, and other structures, was rectangular or lozenge shaped, enclosing an area frequently used for drill purposes and known as the parade ground. It is hardly surprising that such a central plaza, or place d' armes, should have characterized military installations of the American West, inasmuch as the tradition is a part of modern military planning itself, irrespective of the nationality of the planners. At Fort Stevenson, however, in addition to the "hollow square" of most forts, there is one element which is distinctly Southwestern, like the adobe brick, and is reminiscent of the patio. The courtyard, enclosed by the wings of the individual buildings, is a close parallel to the patio of the casa in the Southwest. It would be interesting to know the derivation of this plan, utilized at Fort Stevenson and other posts, and, indeed, often followed today. The initiative in planning frontier posts was apparently left to field engineers by the War Department, and de Trobriand stated that on arrival of the garrison at the site, "a complete plan" was made of the buildings to be erected, their location, and their dimensions (de Trobriand, 1951, p. 42). The definite Southwestern flavor of this post also suggests that it may have been designed by field engineers, or that the post was built according to plans already developed elsewhere about the same period, probably in the Southwest. A comparison of plans of posts constructed in that region in the years just preceding 1867 might shed light on this matter. In this connection, it may be noted that similar courtyard-building plans were not used at Fort Laramie in early military structures, though buildings there were in part of adobe-brick masonry, as has been seen.

Little can be said on the matter of trails and wagon roads that afforded communication and transport for Fort Stevenson, though these have an obvious bearing upon any study of the physical remains of the post. One study of this nature has recently appeared (Wright, 1953). It should, perhaps, be pointed out that communication and transport for Fort Stevenson, from 1867 until about 1873, was largely by river steamboat, and the subject of steam navigation of the upper Missouri for this period is receiving special attention from Ray H. Mattison, historian, National Park Service. Records of freight shipments, passenger traffic, and related matters should afford additional light on the circumstances of life at Fort Stevenson, beyond that now available. Business records, such as those of J. C. Burbank and Company, contractors for supplying materials for Fort Totten (via Fort Stevenson), if available, might also afford further light on Fort Stevenson itself.

It has been mentioned that, upon excavation, few errors were found in the post records for Fort Stevenson, which appear to be remarkably complete and intact. So far as measurements of separate structures and specific facts concerning individual buildings could be verified, the data preserved therein appear to be accurate (fig. 15). One curious minor error was, however, noted on the ground plan of 1879, in the measurements of the parade ground itself, as delimited by the buildings of the post. On this plan, the distance shown—333 feet—between the front wall line of the Guard House and that of the row of Officers' Quarters—the east-west dimension of the parade—is approximately correct (measurement from photostat of original; the photostat is reduced one-half). The dimension of the parade at right angles (north-south) is, however, shown on the plan as approximately 196 feet between buildings, whereas the actual distance between remaining footings of these structures is 220 feet. (The ground plan of 1879, as traced for publication in Mattison, 1951, opp. p. 28, differs slightly from the photostat in these measurements.)

The reason for this error in the plan of 1879 is not known. Inasmuch as the buildings appear to have been correctly measured, it seems probable that the parade ground was not actually measured overall, and that the buildings were placed on the plan, one at a time, the

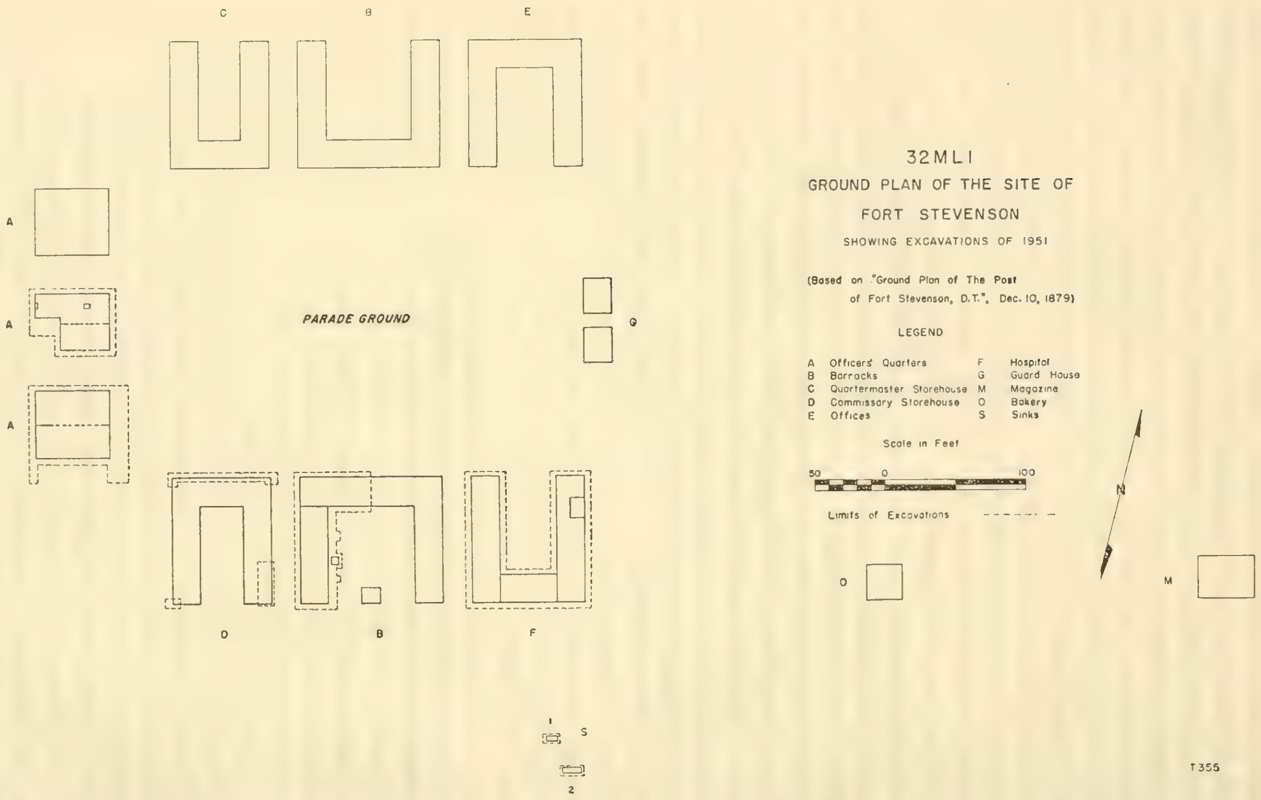

32MLI
GROUND PLAN OF THE SITE OF
FORT STEVENSON
SHOWING EXCAVATIONS OF 1951
(Based on "Ground Plan of The Post of Fort Stevenson, D.T.", Dec. 10, 1879)
LEGEND
A Officers' Quarters
B Barracks
C Quartermaster Storehouse
D Commissary Storehouse
E Offices
F Hospital
G Guard House
M Magazine
O Bakery
S Sinks
Scale in Feet
50
0
100
Limits of Excavations
N
PARADE GROUND
A
A
A
C
B
E
D
B
F
G
O
M
S
1
2
T355

FIGURE 15.—Ground plan of the site of Fort Stevenson, showing excavations of 1951.

"offset" between the south building line of the parade and the south building line of the South Officers' Quarters, and that between the north line of the parade and the north line of the North Officers' Quarters, having somehow been overlooked. The narrative inspection report of 1879, submitted separately from the plan of the same year, gives these figures as 195 and 331 feet, respectively, and is therefore also inaccurate (Mattison, 1951, p. 32).

The plan of 1879 was available in photocopy during excavations, and was most useful in studying the site. The plan is, in fact, basic to an understanding of the whole site, and the designation of particular sites, areas, and details as given therein was adhered to in recording excavations, rather than introducing arbitrary, new designations. Only occasionally was the term "feature," familiar in much archeological fieldwork, used; the architectural term "detail," is more apropriate. It seemed preferable to refer to room areas of various buildings (e.g., of the Hospital) according to the identification given in 1879 ("bake house," "kitchen," etc.), rather than to assign arbitrary references without regard to probable or known functions, despite the fact that these buildings are known to have been variously used at different times. To have introduced new field references would have been to confuse the study of the contemporary record as well as of the archeological evidence.

Some record should here be made of the fate of the remains of Fort Stevenson subsequent to the abandonment of the buildings by the Federal Government and their public sale in December 1897 (Mattison, 1951, p. 39). From the evidence of a few surviving photographs and local tradition as well as of excavation, only the Commanding Officer's Quarters remained intact for any length of time. This building was used by several families as a farm home and, later, as a granary, and was finally demolished about 1945. At some time during the use of this building as a private home, a cellar was excavated beneath the structure, and large portions of the footings between the north and south halves of the building, and of the south footing, were completely removed. This is said to have so weakened the structure that it became uninhabitable; subsequently it was used for storage of grain and this further misuse doubtless hastened its destruction.

A large barn, standing in 1951 but subsequently demolished, immediately west of the parade ground, was built at some time between 1883 and 1894, during the period of the use of the former post as an Indian school (pl. 34, *a*). This barn was, in 1951, smaller than when originally built, and parts of the footings of the larger original could still be seen. Local informants stated that the barn had merely been cut down in size from the original, after extensive wind damage at some time in the past, and was not reconstructed. It is probable that many of the large cottonwood timbers used in the original barn had been taken from military buildings demolished after 1883. Many of the timbers in the barn showed dowels, dowel holes, spiking, and joining, which served no useful purpose in the barn, but indicated previous use of the timbers. The barn was demolished in 1952.

Several buildings in the city of Garrison and elsewhere in the vicinity are said locally to have come from Fort Stevenson, but it is not probable that any of these were moved intact. Such buildings, like the barn, probably merely contain timbers and millwork previously used at the fort.

From documentary sources, as well as archeological evidence, certain buildings are known to have been destroyed by fire at the site of Fort Stevenson, either during or subsequent to the military occupation. Examples of these are the Hospital, the South and North Barracks, and the Commissary Storehouse. From local information and the testimony of the excavation of the site units, other buildings were purposely demolished at one time or another, probably for salvage of timbers, stone, and other materials. Examples of these are the South Officers' Quarters and the Commanding Officer's Quarters. At each of these, whether the buildings were destroyed by fire or intentionally demolished, certain other manmade changes probably also occurred. Thus, in the case of the Hospital and the South Barracks, both of which had adobe-masonry walls, evidence was found of apparently intentional leveling of the ruins subsequent to the fires. Large sections of walls, for example, were found collapsed flat, as though they had been pushed over from a standing position, or had fallen of their own weight, after having been weakened by weathering.

Several of the original cellars, such as those of the Hospital and the South Barracks, had received great quantities of trash after the destruction of the buildings. This was especially noticeable at the site of the large cellar of the Commissary Storehouse, which had served as a dump over a considerable period of time for the adjacent farm home in the former Commanding Officer's Quarters. Here there was also evidence of attempts to fill the depression, probably to remove the farm hazard of an open pit, with additional disposal materials such as plaster, ash, gravel, and the like, but complete filling had not been achieved, because of the large size of the original cellar.

One new structure was actually imposed directly upon the site of the military post and Indian school. This was an earth potato cellar, made about 1915 between the sites of the Hospital and South Barracks; the excavation is said to have been made with a horse and scraper. This cellar was actually semisubterranean, and earth had been piled on either side of the excavation—on parts of the sites of the Hospital and South Barracks—the earth being obtained in the immediate vicinity, from the sites of ruined buildings (pl. 35, *b*).

Little damage had been done to the stone footings of the adjacent buildings, probably because of their compact and massive character, but large amounts of adobe-brick rubble were moved at this time from both the Hospital and South Barracks sites. This was particularly noticeable in the exacavation of the latter. Here the front portion, or "main body," had been denuded of practically all building debris aside from the very footings themselves.

No other manmade changes were observed at the site of Fort Stevenson except for those arising from agricultural use (pl. 31). Some attempts had been made to remove the stone footings of buildings, probably in the hope of increasing the cultivable area about the site of the fort; this was particularly noticeable near the front (north) footing of the East Wing of the Hospital. But these attempts seem to have been abandoned. The months of soldier labor expended here in the late 1860's were not to be obliterated by the occasional efforts of later farmers.

The original parade ground of the fort was under cultivation in 1951, and had apparently been plowed for many years, and the site of the Guard House had been almost competely obliterated. Whether this structure was originally provided with a stone footing comparable to that of the larger building is not known. The inspection report of 1879 merely described the Guard House as "made of the same materials as the other buildings of the post" (Mattison, 1951, p. 36). The inference from this statement is that this building was also an adobe-brick masonry structure, set upon a stone footing. A photograph of the former post, probably taken about 1895 and showing the Guard House in ruinous condition, suggests, however, that it was actually a frame building, rather than one of adobe masonry, and such foundation as it once had may have been much slighter than those of the larger buildings (photograph in Missouri Basin Project and National Park Service Region Two files; original in State Historical Society of North Dakota; also in Reid, 1947–48, opp. p. 206).

It remains to mention other uses to which the site of Fort Stevenson had been put, aside from that of cultivation. Because of the character of the building remains, which in most instances could not be cleared or leveled for cultivation, parts of the whole site were fenced and used for stock pasture. Such a fence line still crossed the south side of the original parade ground, crossing the site of the South Officers' Quarters, and the area between this fence and the edge of the terrace (on the south) had probably been used for many years, as it was in 1951, for stock pasture. Though this may have caused minor changes in this area, no major change was seen that could be attributed to stock. Much of the grass cover here appeared to be of native prairie grasses.

The construction of Fort Stevenson appears to have been accomplished by contract with civilians, assisted by soldiers detailed for the purpose from time to time. In August, 1867, de Trobriand noted that civilian employees numbered 40 persons, of the 260 persons at the post. The masons were for the most part civilians (de Trobriand, 1951, p. 43). There are, however, a few suggestions of poor building practices, such as the placement of chimneys upon joists in certain instances, rather than upon separate footings. The practical lessons learned in the process of manufacture of the adobe bricks here are also of interest in this connection. General de Trobriand recorded that there was some experimentation with these bricks before their manufacture and use were mastered (de Trobriand, 1951, p. 335). This fact suggests that, even if made under the direction of an experienced person, the experience had not extended to this immediate region, and may have been obtained elsewhere. In connection with the poor building practices mentioned, there is the related matter of the suitability of the plans for the buildings, and the adequacy of planning prior to actual construction. There is evidence that adobe brick were not entirely suitable for masonry here. This masonry seems at first to have been left exposed to the weather, and the walls were said to have tended to crack (Mattison, 1951, p. 30). This was undoubtedly a result of the inferior quality of the bricks manufactured, as well as of the unsuitability of adobe brick for use in exposed walls in the climate of this region.

Despite the more obvious shortcomings of planning and actual construction of Fort Stevenson, and the obvious haste that was required in 1867 to complete the work, had the buildings been properly cared for during use, had there been no disastrous fires, and had surviving buildings not been actually misused, they should have been sound enough to stand for many years longer than they did. The buildings had, by 1897, served a useful purpose during a frontier period. This frontier period was already over by 1897 and the needs of permanent settlers of the region found little place for undertakings such as the preservation of historic sites and buildings.

EXCAVATIONS OF INDIVIDUAL SITE UNITS

HOSPITAL

The post hospital of Fort Stevenson was located at the southeast corner of the parade ground, separated from the nearest building by an "alley" of 20 feet, which seems to have been a standard distance between all the major structures. This building faced on the parade, and matched the Offices (or Headquarters Building), of identical (reversed) plan, on the opposite (north) side. Like all the larger

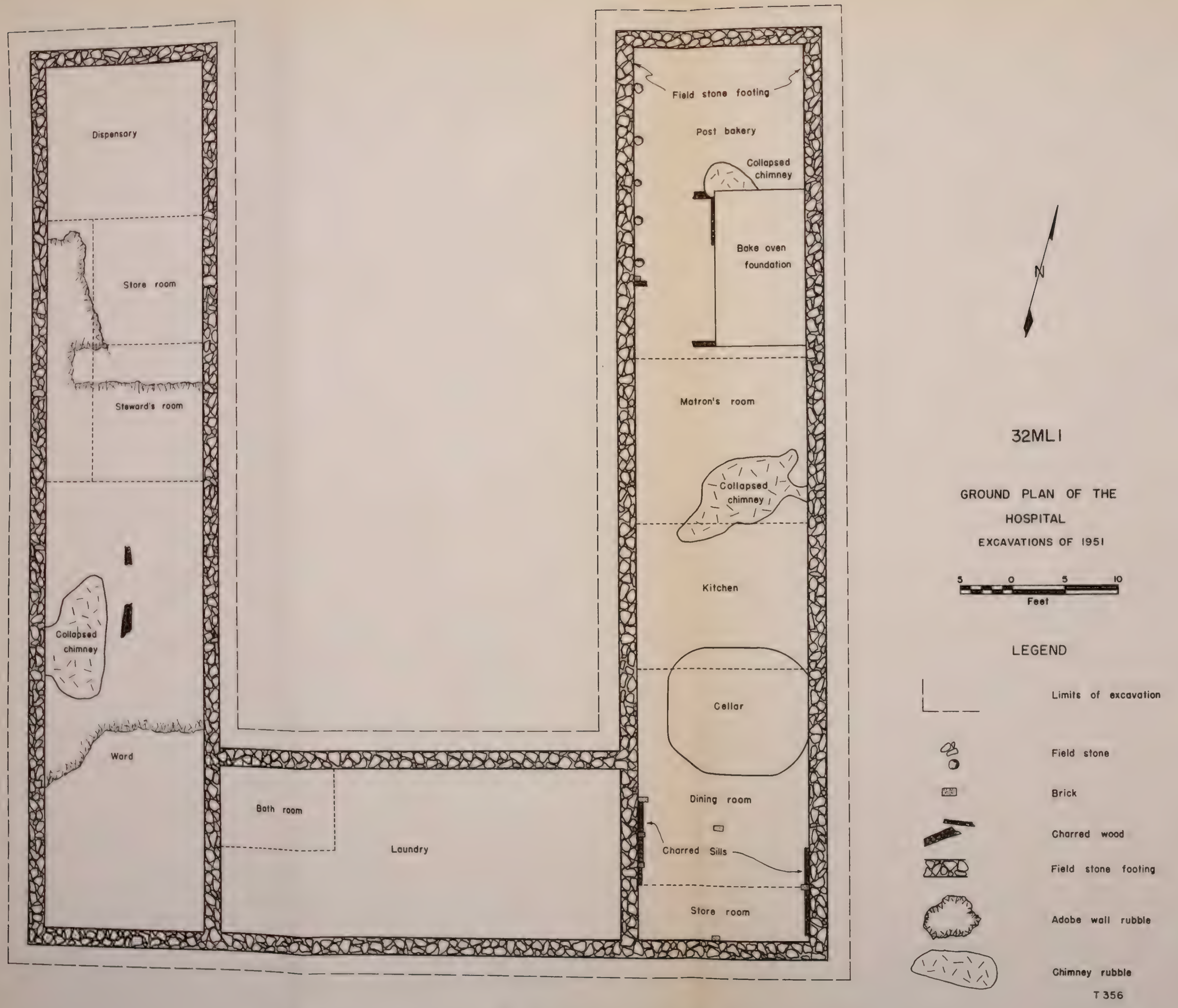
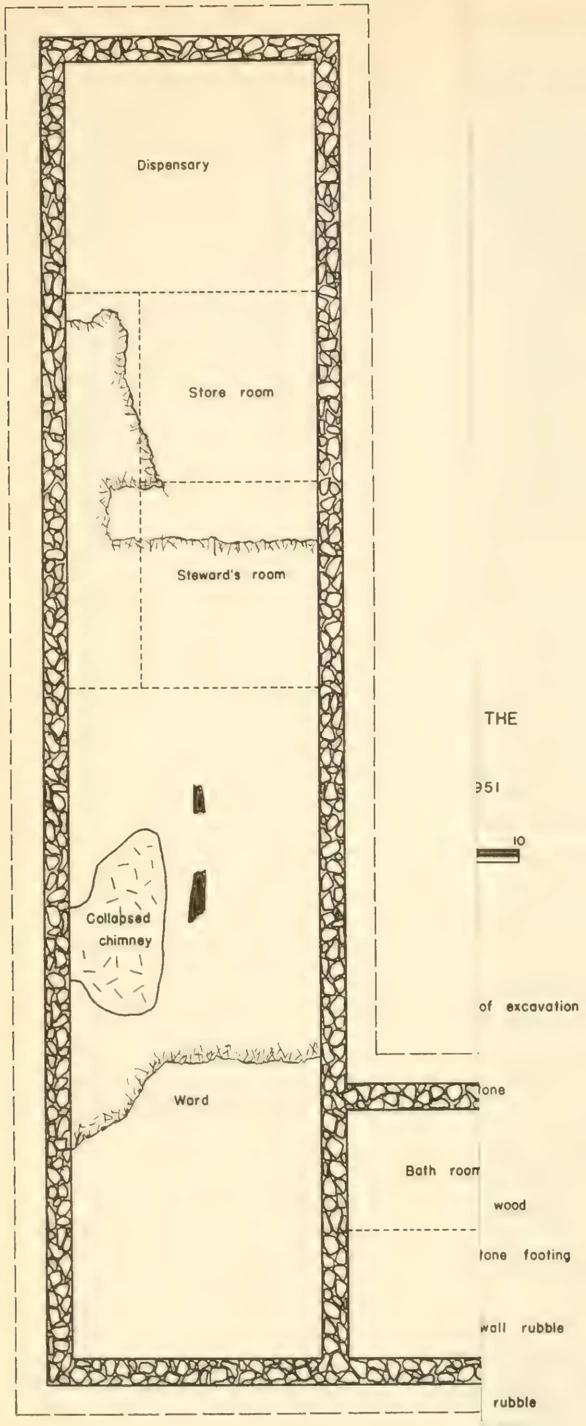

Dispensary
Store room
Steward's room
Collapsed chimney
Ward
Bath room
Laundry
Field stone footing
Post bakery
Collapsed chimney
Bake oven foundation
Matron's room
Collapsed chimney
Kitchen
Cellar
Dining room
Charred Sills
Store room
N
32ML1
GROUND PLAN OF THE HOSPITAL
EXCAVATIONS OF 1951
5 0 5 10
Feet
LEGEND
Limits of excavation
Field stone
Brick
Charred wood
Field stone footing
Adobe wall rubble
Chimney rubble
T 356

FIGURE 16.—Ground plan of the site of the Hospital, Fort Stevenson, showing excavations of 1951.

502329 O - 60 (Face p. 181)


Dispensary
Store room
Steward's room
Collapsed chimney
Ward
Bath room
THE
951
10
of excavation
tone
wood
tone footing
wall rubble
rubble
T 356

FIG

502329 O - 60 (Face p. 181)

buildings of the post, the Hospital was built to enclose three sides of a yard, in this case opening toward the parade (figs. 15, 16).

The Hospital was probably among the first of the larger buildings undertaken in the construction of the permanent post, begun late in June 1867, but there is record of the fact that in October of that year this building had not yet been roofed or floored (de Trobriand, 1951, p. 129). Troops had been at work on the post since June, and from one record it seems likely that work on the Hospital had not been neglected. On August 7, a teamster was fatally injured by Indians "near the foundations of the new fort," and he died shortly afterward "in the hospital" (Mattison, 1951, p. 8). Thus it seems probable that the permanent hospital, though incomplete, was in usable condition by the date of this event. The building was probably roofed before the severe winter of that year set in. No evidence was found, on excavation, of any subsequent major changes in the structure, during the period of its use, and it was probably destroyed in the fires of the summer of 1894, at which time the two former Barracks (one adjacent to the Hospital) were also destroyed. Excavation provided unmistakable evidence of the complete destruction of the Hospital by fire.

The site of the Hospital, like that of most of the other buildings at the post, was well covered with vegetation prior to excavation—largely tough grass sod and weeds (pl. 35, *a*, *b*). This site had never been cultivated or put to other use than that of pasture, largely because of the obstacle of the massive footings, but it had in part been intentionally leveled. Despite this leveling and the mantle of vegetation, the building lines of the original structure were visible throughout most of their courses, and the plan and details concerning the building preserved in the documentary record were also of assistance in defining the site. Partially exposed rows of boulders, sometimes enclosing crumbling lime mortar, were the visible remains of original elements of the structure. Actual masonry was not visible throughout the whole course of these lines, but where otherwise obscure, building lines could be traced in the slightly different appearance of the sod and weed growth. Where vegetation rested upon masonry it was sparser and less luxuriant. Adjacent to the masonry, on either side, it was denser and greener. The cellar area, within the site of the East Wing of the Hospital, was clearly marked by a depression, and supported a rank growth of sod and weeds.

Excavation of the site of the Hospital was begun by stripping off the vegetation, and exposing the actual contours of the surface (pl. 35, *a*, *b*). The masonry footings were then exposed, by narrow trenches (approximately 2 feet in width) on either side, and the removal of loose earth from their upper surfaces, with frequent reference to the documentary records available. These footings were the foundations of the original structure, and constituted its lowest member. Only the cellar, mentioned above, reached a greater depth below the original ground surface. The whole site was then cleared of building debris and accumulated earth, by excavating to the level of the original ground surface within the foundations, in the interior of the original building (pls. 36, *a*, *b*; 37, *a*). This old surface was clearly evident in a level dark loam, undisturbed except where penetrated by building foundations and the trenches originally made for their construction. At points at which the footings were not preserved to their full height, the masonry rose but 4 to 6 inches, at most, above the old ground level. At other points, depending upon slight variations in the contours of the original surface, the masonry was actually flush with it. Within the interior of the building area the average accumulation of debris, resting on the old surface, was no more than 3 to 6 inches, though at some points there were actual slight elevations, the sites of collapsed portions of walls or of chimneys (pls. 36, *b*, 37, *a*; fig. 16).

Like most of the larger buildings at Fort Stevenson, the Hospital was built of timber, adobe brick, common fired brick, stone, and related materials. The inspection report of 1879 described the construction of these buildings as having been "of adobe set up in frames on rock foundations," the roofs being high and shingled, and the buildings one story in height (Mattison, 1951, p. 33). Excavation afforded evidence that there had been some difference in the design of wall members in the different buildings of the post (even among those in which adobe brick were used), and comments on this matter appear elsewhere in the present report. The precise design of the walls of the Hospital, however, was not evident because of the fire and the extensive changes that had taken place at the site subsequent to the destruction of the building by fire.

The walls of the Hospital, comprising adobe-brick masonry and, presumably, timber, had rested on massive stone footings that, in part at least, were set with lime mortar. The footings here averaged 18 inches in thickness (pl. 38, *a*, *b*; fig. 16). The inspection report cited recorded that the walls of certain buildings of the post were "about 14 inches" in thickness (Mattison, 1951, p. 33). This was the thickness of wall remnants found at the site of the South Barracks, to be described, and there is no reason to doubt that this was also the case at the Hospital, though no portions of the adobe-brick walls proper were preserved in place on the footings here.

At some points, this stone masonry footing was preserved to its full original height, and in some parts of its course, at least, the upper surface had been made quite level, by the use of lime mortar, to receive the walls (pls. 37, *b*; 38, *b*). It seems probable that the original intention had been that these footings should all be laid in lime mortar, but the practice had, apparently, soon been abandoned, perhaps because of a shortage of lime or the lateness of the season at which the masonry was constructed, or both. Although the masonry footings were massive, as has been stated, they were also rather shallow, and extended little more than a foot or two below the original ground surface, as was seen at two test excavations, carried below the base of the footings (pls. 37, *b*; 38, *a*). These footings had been constructed in narrow trenches, evidence of which, in disturbed soils, was frequently encountered in the course of excavation.

The masonry footings of the Hospital had been made of field stone of random size, such as could have been picked up on the prairie in the vicinity, brought to the site by wagon, and worked and placed by individual workmen (pls. 37, 38). Many of the stones had been used in the masonry without trimming or other preparation, but some had been roughly split, probably with a heavy sledge. These broken or roughly "faced" stones had usually been placed with a face toward an exposed or upper surface, the smoother and flatter surfaces vertical or horizontal. After these larger, and sometimes shaped, pieces had been set, smaller stones and spalls had been used to fill the joints of the masonry (pl. 38, *b*). Although the stones of the footing were ordinarily placed horizontally the masonry was not actually coursed throughout or consistently. Little attempt had, apparently, been made to select material for the footings, other than according to convenient size for carrying and handling, or to provide more than a sound foundation for the walls and building proper. Cornerstones had not been specially trimmed, so far as could be seen, though it should be noted that some stone had been removed from the footings, and trimmed pieces may thus have been lost, as at exterior corners. (pl. 37, *b*).

There are at least two explanations of the loss of materials such as the stones of these footings, and of the building debris that once covered the site. Other buildings in the vicinity of Fort Stevenson today are said to have been made of materials from the abandoned buildings, including both stone and timbers, and some intentional leveling doubtless occurred during the period of the use of the site of the post as a farm. Secondly, a root cellar, made of earth about 1915 by using a horse and scraper, lying between the sites of the Hospital and the South Barracks and actually superimposed on parts of both, was in part of earth and debris scraped from these sites (pl. 35, *b*).

The deposit covering the remains of the Hospital was composed of various materials derived from the building itself. These included adobe brick with adobe mortar, common fired brick with lime mortar, charred bits of wood and metal hardware from the building, ash layers, derived from the destruction of the building, and large quantities of earth, in part probably wind deposited, but largely the remnant materials from the disintegration of the adobe bricks and adobe mortar. Much of the adobe brick and mortar had been altered by fire at the time of the destruction of the building. As a result, it was possible, on excavation, to isolate and remove individual bricks, accidentally fired; this was not possible with the unfired bricks occasionally seen. This debris within the site of the building, as has been stated, was relatively shallow except in areas such as that of the West Wing, over which the earth cellar had been built. Few intelligible details of original construction were found, with the exception of an occasional stone or fired-brick footing for floor joists, of collapsed portions of adobe-brick masonry and fired-brick chimneys, the stone foundation of a bake oven, and a small cellar at the rear of the East Wing. It was known that the exterior of the Hospital, like many if not all of the buildings of the post, had been whitewashed, probably during the period of military use, and traces of this whitewash were found on some of the adobe brick. No evidence of weatherboarding or siding was found.

The common fired brick encountered at this site were the familiar coarse red bricks manufactured in many places, and here employed for chimney construction. A few of these bricks were marked, and they appeared to be exclusively of St. Louis manufacture. There is no reason to believe that any of these fired bricks were made here, as were the adobe bricks. There is, on the other hand, documentation concerning the shipment of brick with other building materials furnished on contract. These bricks had been laid in lime mortar, the lime also doubtless received under contract, and had been placed in the masonry of chimneys in ordinary bond, so far as could be seen in the few instances in which the masonry of the collapsed chimneys was sufficiently intact to observe the probable arrangement of the bricks. These chimneys were, of course, for use with stoves, and the base of one large circular heating stove (apparently of a style suitable for use with either wood or lignite) was found on the site of the West Wing, though badly damaged by the intense heat to which it had been subjected on the destruction of the building by fire.

No information was obtained from excavation concerning the placement, dimension, or type of flooring used in the building, but it was known that the building had had necessary flooring, from charred bits of wood of this kind found, as well as from the documentary record. According to the inspection report of 1879, the flooring of the barracks was of dressed pine laid upon rough flooring of cottonwood plank, and the same was doubtless true at the Hospital (Mattison, 1951, pp. 34, 35).

The root cellar, built about 1915 of earth and rubble obtained in the immediate vicinity, had been so placed that it covered the whole of the site of the West Wing of the Hospital, obscuring all but the line of the footing on the east side, toward the yard. This recent earthwork had protected from further disintegration large portions of collapsed adobe-brick-wall materials. In collapsing, on or after the destruction of the building by fire, the portions frequently retained much of their original position and arrangement, except that they lay on their sides, individual bricks thus resting on edge rather than superimposed, as originally. The arrangement of bricks in these portions was in regular courses, but without regular bond or courses of headers. Since the individual bricks were of somewhat irregular dimensions, and the mortar joints not perfect in alinement or width, the vertical joints were also irregular, and occurred at random, according to the size and placement of the adobe bricks.

No parts of the timber members originally used in framing the walls were found. From the large size of collapsed areas of adobe-brick masonry, found without associated timber remains of framing dimension, it seems probable that this framing had been widely spaced, in this structure, and had been totally destroyed in the fire. Evidence of a slightly different type of construction, involving timber framing and adobe-brick packing, found at the site of the Commanding Officer's Quarters, is described elsewhere.

The inspection report of 1879, and the ground plan of the post, of the same year, provide some data on the varied use of the different parts of the Hospital at that time, but this information was verified in excavation in only occasional instances (fig. 16). For one reason or another, evidence that might have supplemented the documentary record was lacking, except as mentioned hereafter. It is hardly surprising that physical remains were lacking, which might have indicated the position or character of interior partitions and minor architectural details. The partitions probably had no separate footings, merely resting on joists, or even directly upon the wooden flooring, and all these wood members had been destroyed. No footings were found that might have indicated the precise original location of chimneys, and in this instance the chimneys are known to have been set directly upon the floor joists (report of 1879, cited by Mattison, 1951, p. 33). Here and elsewhere poor building practices reveal a lack of careful advance planning for the buildings.

Of rooms 1 to 6 of the ground plan of 1879—dispensary, storeroom, steward's room, ward, bathroom, and laundry, respectively—almost no distinct evidence was found (fig. 16). Occasional objects were encountered, which appear to be related to the original use of the building, such as scissors (apparently of surgical type), parts of glass syringes, and numerous frames of metal cots, but all, or many, of these may have been introduced on the site during the period of the use of the building as an Indian school, rather than during the earlier period of its use as an Army hospital. Cast-iron frames of school desks, probably those in use in the Indian school at the time the building was destroyed, were also found in excavations at the Hospital.

Scarcely more information of architectural significance was found for other room areas of the Hospital—those indicated in 1879 as rooms 7 to 11—closet, dining room, kitchen, matron's room, and bake house, respectively (this bake house was actually a room within the Hospital, and should not be confused with another Bake House, probably built some time after 1879, and located east of the Hospital, between it and the Magazine) (fig. 15). A cellar area was found beneath the dining-room area indicated on the plan of 1879; this cellar had, however, merely been excavated into the subsurface clay and gravel and was not provided with cribbing or masonry. The dimensions of the cellar as shown on the accompanying plan are consequently only approximate (fig. 16; pl. 36, *b*). No evidence was available to indicate the exact period of construction of this cellar, which is not mentioned in the report of 1879. Here as elsewhere smaller objects found appeared to be related rather to the use of the building as a school than as a hospital.

In areas 5 and 6, the bathroom and laundry rooms shown on the plan of 1879, almost no building debris or objects were found, and these areas had probably been much reduced in height at the time the adjacent earth cellar was made, leaving little deposit in these areas above the original ground surface upon which the Hospital had stood.

At the site of the bakery, or bake oven, of the Hospital, the only architectural detail of note was the stone foundation or platform, probably the base for the oven proper (pl. 36, *b*). Although the masonry of this footing was not preserved to its full original height, it was, however, higher than the top of the adjacent wall footing by as much as 6 inches, and had probably originally been even slightly higher. This foundation had been made of large boulders (some as great as 2 feet in greatest dimension), spalls, and even a few fired brick. The upper surface of the platform was not smooth or level, and some of the original stones had probably been removed after the destruction of the building, with any parts that may have rested on the foundation. The rock in this masonry had not been laid in regular courses or layers, but at random; some of the flatter stones had been laid flat, but others were set on edge or at an angle, as convenient in the masonry. The upper surface of the surviving foundation had probably been subjected to intense heat from time to time, from the stoves or ovens, individual stones having thus been cracked and spalled. Adjacent to the masonry foundation was a rubble heap of fired brick, but it was not possible to determine the precise original location of this chimney, lacking any separate footing.

Although no remnants of doors, windows, or casings were found at this site, even in charred form, window-glass fragments were encountered in almost all parts of the site. Some of this glass appeared to be undamaged by fire, but most of it occurred in melted or fire-damaged condition. No complete panes of glass had survived, but it seems probable that the windows were simple 4- or 6-pane sash, the panes hence rather small. The fragments all appear to be of the modern type in thickness, approaching that today described as No. 6 (approximately $3/16$ inch). Little of the metal hardware in use in the building at the time of the fire had survived, and much of this had been so damaged by heat that it revealed little of the appearance of original items. Such hardware as had been in use here was, perhaps, of the simplest sort, and the bits found revealed nothing of architectural significance concerning the plan of the building.

The surviving evidence concerning the original construction of the post Hospital may be summarized as follows: evidence derived from the documentary record (including photographic and other pictorial evidence) and from archeological investigation. The building had been set upon stone-masonry foundations. The walls consisted of adobe-brick masonry (with, probably, some timber framing, the exact design of which is obscure). Roofs, floors, and millwork at windows and doors were of wood. Only adobe brick and the heavier building timbers, of cottonwood, were of local origin and manufacture. All else—building hardware, windows, doors, and casings, even shingles, common fired bricks, and lime—had been brought to the post by steamboat, from a distance (probably largely from St. Louis, Mo.). The window sashes were provided with glass. Several common fired-brick chimneys, for use with stoves, were a part of the original building. Their exact location cannot be demonstrated, though their approximate position is known from documentary records, and at least one photograph, which shows the east elevation of the East Wing of the Hospital (copies in Missouri Basin Project and National Park Service Region Two files, showing the placement of windows on the east elevation but nothing of their detail). No major architectural changes are known to have been made on the structure after its completion, and any alterations that may have been made were probably minor in nature.

SOUTH BARRACKS

Fort Stevenson was provided with two barracks or sets of "Company Quarters," for housing the two companies of infantry intended for it. Like other major buildings about the parade ground, these barracks were built to enclose a yard. In the case of the barracks, however, the central portion or "body" of the buildings faced immediately on the parade, the yards thus opening away from it, perhaps to afford privacy for the enlisted men occupying the barracks (fig. 15).

Centrally located with respect to the whole post, the barracks were doubtless among the earlier of the large buildings undertaken, but there is record of the fact that not until January 1868 were the troops completely housed (Mattison, 1951, p. 28). These barracks could have provided little more than minimum housing needs, in dormitory and mess space, and it is difficult to see how these two buildings could have served all the needs of 238 men, for whom they were planned. The average strength of the post during most of its history was, however, only about 110 (Mattison, 1951, p. 24).

Like the majority of buildings at the fort, the barracks were built of field stone, adobe brick, timber, and related materials, in the same style as that previously described for the Hospital, and were provided with chimneys of common fired brick (fig. 17; pls. 39–41). Excavations were made at the site of the barracks on the south side of the parade ground, and this site was, for convenience, designated as the South Barracks. As was the case at the site of the Hospital, this site was well covered with grass sod and weeds. It had been disturbed in only one area since the final collapse of the remains of the structure after the fire of 1894. This collapse had left a somewhat uneven surface, with occasional low mounds of adobe-brick rubble near building lines, and a depression marking the site of a small cellar (fig. 17). At the front of the building site, portions of the stone masonry of footings were visible throughout parts of their course (pl. 39, *b*). No known photograph or sketch shows the barracks buildings.

Only a part of the site of the South Barracks was excavated (fig. 17). This part was the west half of the "body"—the company room or dormitory of the original—and the entire West Wing, extending to the rear (southward). The other half of the whole site, the east half of the "body" and the East Wing, was left unexcavated; this half of the remains of the original structure had been covered by parts of the root cellar mentioned, made in 1915, and superimposed on parts of the sites of the Hospital and South Barracks. Removal of the part of this same large earthwork lying over the West Wing of the Hospital had been completed prior to excavation at the site of the South Barracks, and experience gained there suggested that removal of this part would not be warranted.

The irregular mounds of rubble of accidentally fired adobe brick and common fired brick were visible particularly at the site of the West Wing (pls. 39, *b*; 41, *b*). In the front area, the west half of the company room, little or no deposit had been preserved lying on the original surface of the ground, except at the southwest corner adjacent to the West Wing, and this front area had been considerably altered, prob-

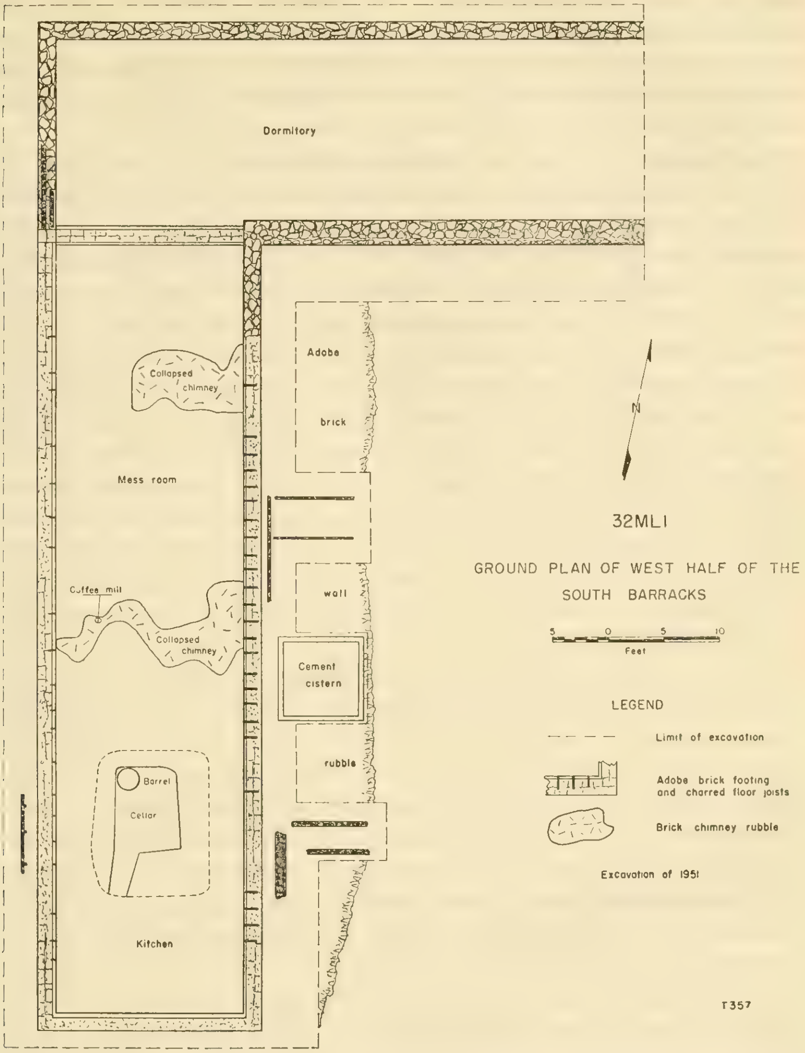

Dormitory
Collapsed chimney
Mess room
Coffee mill
Collapsed chimney
Barrel
Cellar
Kitchen
Adobe
brick
wall
Cement cistern
rubble
N
32MLI
GROUND PLAN OF WEST HALF OF THE SOUTH BARRACKS
5 0 5 10
Feet
LEGEND
Limit of excavation
Adobe brick footing and charred floor joists
Brick chimney rubble
Excavation of 1951
T357

FIGURE 17.—Ground plan of the site of the west half of the South Barracks, Fort Stevenson, showing excavations of 1951.

ably in the process of obtaining earth by horse scraper for the root cellar of 1915. In this area, except at the one corner mentioned, no adobe-brick wall remains were found on excavation, and little else than the lower parts of the stone masonry footing remained (pl. 39, *a*). Even this footing had been partially removed, either in the earth moving, or to obtain stone for masonry elsewhere, after the destruction of the buildings. The surface of the whole site was covered with rather sparse weed growth at places in which the rubble heaps had furnished a poor location for grass (as in the area of the West Wing), and with grass in areas of lower elevation approaching that of the original ground surface (as in the case of the area of the "body"). The vegetation was first removed from the part of the site to be excavated, and excavation was begun by narrow trenching adjacent to masonry footings.

The masonry footings encountered at the site of the South Barracks did not differ significantly from those previously seen at the site of the Hospital. They had also been built of random-sized field stone, frequently roughly faced or placed with a natural flat surface exposed, in part in lime mortar, the spaces toward the center line of the masonry having been filled with smaller rock and spalls (pl. 41, *a*). Little care had been given, in building, to the appearance of the finished masonry, probably because the footings were largely covered in use, and at one point along the rear wall of the "body" of the building, measurements apparently had gone awry (fig. 17; pl. 39 *a*). The footing of the rear (south) wall of the "body" had not at first been properly alined with its continuation to the west, the portion separating this front room area from the rear wing, and the former part had been altered before the walls were erected by widening the footing approximately 6 inches on the exterior (south), to make it conform with the latter part (pl. 39, *a*).

As was found to be the case at the site of the Hospital, the frame and adobe-brick walls of the South Barracks had rested upon the stone masonry footings, the walls being somewhat narrower than the width of the footings. The walls of these barracks are said in the report of 1879 to have measured "about 14 inches" in thickness, and this was the approximate size of portions measurable in place during excavation. The walls had been so placed that their exterior surfaces were flush with exterior surfaces of the footing, thus leaving approximately 6 inches of exposed masonry on the interior, upon which the floor joists rested (pl. 40, *a*, *b*).

In the South Barracks, particularly in the West Wing, portions of the adobe-brick walls had been preserved in place throughout most of their setting, but to a height of only one or two courses (pl. 41, *a*). These parts of the adobe-brick walls of the building still in place were ordinarily less affected by the fire that destroyed the building, and were somewhat more difficult to see and trace than the collapsed portions of walls. They had in some way been protected from the fire, by falling debris or because they had been beneath the hottest part of the flames. The upper parts of walls, found collapsed, would have been subjected to greater heat and had probably been fired prior to the time of collapse, rather than subsequently.

At several points in the excavation here, fragments of charred wood members were found beneath collapsed portions of wall. These were, however, usually beyond measurement and afforded no information concerning timber design of the original building (fig. 17). Little could be learned from these fragments concerning the original dimensions or use of these wood members, because of the extensive fire damage and the contorted state of the rubble, ash, and charred fragments. One or two fragments appeared to have originally measured 3 inches by ½ inch, and were probably bits of flooring. At some points along the interior of walls, resting upon the masonry footings, were other fragments of wood, the remains of the ends of floor joists, spaced 14 inches apart, on center, and probably 2 inches by 4 inches dimension. No information was available on the original length of these timbers, but they would, of course, have spanned the width of the wing. Along the exterior of the wall lines, and at or above the level of the footings, were a few charred or decayed remnants of the original siding of the building; though none of these could be accurately measured, fragments of siding found had apparently been 1 inch by 6 inches dimension, the length unknown. At one point, traces were seen of what were probably the vertical timbers to which the siding had been fastened. These were apparently spaced 2 feet 6 inches apart, but no measurement of their size could be obtained.

The site of the West Wing excavated is that of the wing originally used as a mess hall and kitchen. Even without the available documentary evidence, the earlier use of this area would have been quite clear, from the evidence of large quantities of common white earthenware ("Ironstone"), metal mess plates, and other mess gear, although the actual provenience of these materials is, at least in part, that of the Indian school period rather than of the earlier military period. No divisions or partitions of the wing could be distinguished, however, aside from that of a cellar area near the rear. This cellar area, like other interior and exterior areas about this wing, contained large quantities of adobe-brick and fired-brick rubble, charred wood, ash, and the like, derived from the destruction of the building. In addition to much obviously modern farm refuse, it also produced some older household debris, which had been in use in the building at the time of the fire. Here also were traces of two barrels and of wooden staves with metal hoops, which had stood on the dirt floor of the cellar at the time of the fire (fig. 17). No evidence was available to indicate whether this cellar had been constructed during the military period at the post. A cellar here is not mentioned in the report of 1879, but it seems probable that it existed at that time.

At the site of this West Wing of the South Barracks were two distinct areas of fallen fired brick and lime mortar, the remains of chimneys that had collapsed (pl. 41, *b*). No bond or masonry pattern was descernible in this debris, the chimneys having fallen in heaps. No footings were found for these chimneys, and they are known from the inspection reports to have merely rested on floor joists, rather than upon separate footings. The joists had, of course, been destroyed by the fire. A metal object that appears to be part of a coffee mill was found lying on top of the chimney heap nearest to the cellar (fig. 17) (thus, probably, near the actual kitchen area), in such a position as to suggest that the mill had originally been fastened to the chimney. Clear evidence of the action of the fire that had destroyed the building was the abundant melted window and bottle glass found, and the heat-damaged metals and earthenware, in addition to the evidence of the burning of the structure itself.

Of smaller object materials about the building at the time of the fire, and obtained in excavation, many appear to pertain to the military period of the use of this building, while a few objects are definitely attributable to this period, having survived the period of the use of the building as a dormitory for the Indian school. Such objects as the mess gear of military style may not, however, have been directly military. It seems probable that much of what was in use here in 1894 had actually been inherited from the military command on the abandonment of the post in 1883, or was subsequently obtained through the War Department for the school, from property previously used here or elsewhere at military installations.

One architectural detail of interest, situated along the exterior of the east wall of the West Wing (toward the yard), and united with the original masonry footing at this point, is a cistern (fig. 17). This had been constructed of common fired brick and had been plastered on the interior with what appeared to be Portland cement, rather than with lime mortar or other material. Inasmuch as Portland cement was not commercially available, or widely used, in the West until the 1880's, this addition to the original building was probably introduced during the period of the use of the building as a school. It is the only major late architectural alteration or modification of the military buildings, for which evidence was found on excavation at the site of the fort. The cistern, in all probability, had not been used for any length of time, and prior to the fire had been partly filled with lignite, gravel, sand, and other material. Above this fill was adobe-brick rubble derived from the walls of the building after the fire. The adobe brick, of earlier manufacture, was thus superimposed upon construction of a later period, in which Portland cement had been used.

Excavation of the site of the West Wing of the South Barracks also turned up great quantities of obviously recent farm debris. Among these was a butchering sink made from a large galvanized-iron tub, the skeleton of a pig, stove parts that appeared to have been used in the later farm rather than at the earlier school or military post, and other objects. Few of these were of permanent interest, or were saved, and frequently the only distinction that could be made between the various object materials found was whether they were burnt or damaged by fire, and hence pertained to a period preceding the fire of 1894.

On the evidence from excavation of the South Barracks, and from the documentary record, the Barracks of Fort Stevenson thus differed in construction in no important respect from that of the Hospital, previously described. Adobe-brick masonry walls resting upon stone-masonry footings, timberwork (the exact design of which is not known), and fired brick chimneys, were the major architectural elements. Only one major alteration had been accomplished at the site of the South Barracks subsequent to the military period, that of the addition of a cistern of brick masonry and Portland cement.

COMMISSARY STOREHOUSE

The Commissary Storehouse, in which were housed the subsistence stores of the post, was a balloon-frame structure, built in 1873 (Mattison, 1951, p. 34). It is said to have been the only building of the post built in this architectural style, which was first employed about 1850, and soon became the most common style for most wooden buildings, large and small, public and private. The exact date at which this building was destroyed by fire is not known, but this occurred at some time after 1885, in which year the former storehouse was in use as a girls' dormitory of the Indian school, as is known from a ground plan of the former post made at that time (Mattison, 1951, p. 37, tracing of photostat or original plan in National Archives; the date of the original is 1885, rather than 1863, as shown). Though not specifically mentioned in connection with the fires of the summer of 1894, the building may have burned at that time, Subsequently, much of the salvageable building material had been removed.

The record of the sale of the public property, in 1897, shows the sale of a commissary building, but this building can hardly have been the original Commissary Storehouse of the period 1873–85, in view of the archeological evidence of the destruction of this building by fire (Mattison, 1951, p. 40). After the destruction of the original Commissary Storehouse, perhaps in 1894, another building may have been used for the purpose by the Indian school, until the removal of the school, soon afterward, to the Indian agency location at Elbowoods. The original Quartermaster Storehouse, which faced the Commissary Storehouse on the opposite side of the parade, survived somewhat longer, and this may be the building referred to in the sale record of 1897. A photograph said to have been taken "about 1895" shows this quartermaster building in good repair (Mattison, 1951, opp. p. 2).

The site of the original Commissary Storehouse, on the south side of the parade ground and near the southwest corner (fig. 15), was almost entirely obscured, prior to excavation, by a dense growth of vegetation—largely lush grass with relatively few weeds—and no part of the original construction, such as exposed stones of the footing, was visible (pl. 42, *a*). Only a prominent depression at the rear of the site of the East Wing of the building served to mark the actual location of any part of the whole (fig. 15). This depression, clearly the remains of a cellar, was, as a matter of fact, one of the most prominent surface features of the whole site of Fort Stevenson.

Without any surface indication of the original building lines at this site, excavation was begun by trenching at the supposed location of the front line of the original structure, following the plan of 1879, and at the outer rear corners (i.e., southeast and southwest) of the East and West Wings shown on the plan. Clear evidence of the original location of the building on this site was obtained only when a depth of more than a foot had been reached. Portions of the remains of the original footings were then encountered along the line of the front wall footing and at the rear outer corners mentioned (pl. 42, *a*). These portions of the footings consisted of but single large rocks in rough alinement, but seldom in contact with each other—the remnants of the masonry of the footings after most of the stones had been removed for use elsewhere, at some time after the destruction of the building. So much of the masonry had been removed that in portions of its course the only evidence that there had once been a footing in this position was the disturbed soil in the refilled trench originally made to accommodate the masonry. Little could be learned of the original appearance of the masonry here, but the almost complete lack of lime-mortar fragments suggested that the masonry in this case, as elsewhere about the post, had in part been laid dry, without mortar. Though little evidence had been preserved concerning the footing for this building, there is no reason to suppose that it differed in any way from those of other buildings, even though the building proper was in this instance of a different style.

At the site of the masonry footings at the southwest corner of the West Wing, much the same condition was found (fig. 15). Only traces of the original stone masonry, in scattered stones and the disturbed, refilled trench, provided information to verify the dimensions of the building as given in the report and plan. At the site of the cellar at the rear of the East Wing, no stone or other masonry of any kind was found until the excavation had reached nearly the floor level of the original cellar. At this point, the remaining masonry, of the cellar walls, was of common red fired brick. The brick used were of the same type as that previously found used elsewhere only for chimneys. Only the east half of the cellar area was excavated, because of the size of the unit (fig. 18; pls. 42, 43).

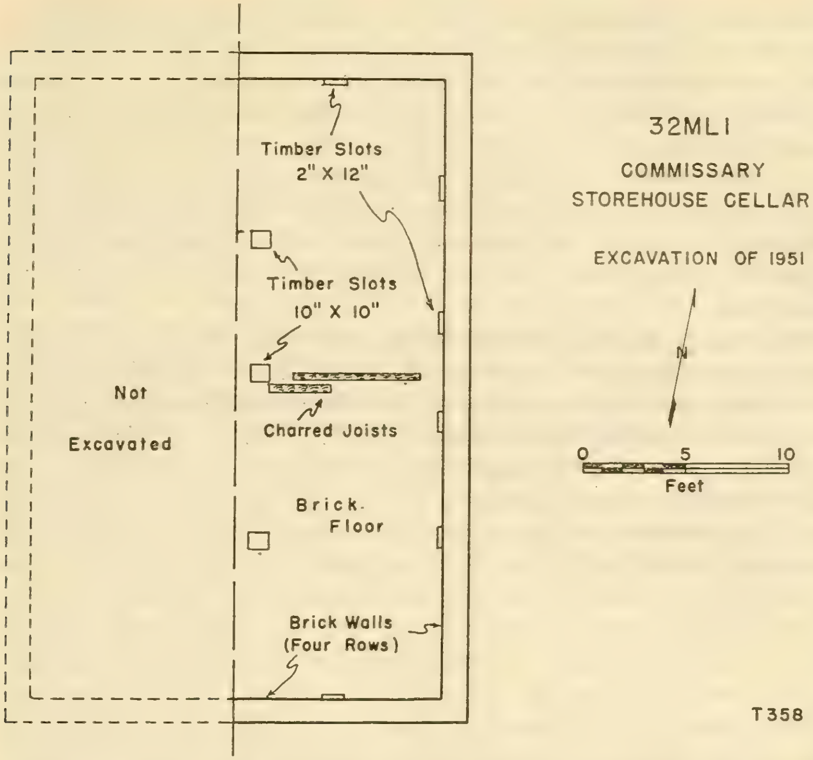

Timber Slots
2" X 12"
Timber Slots
10" X 10"
Charred Joists
Brick Floor
Brick Walls
(Four Rows)
Not Excavated
32ML1
COMMISSARY
STOREHOUSE CELLAR
EXCAVATION OF 1951
N
0
5
10
Feet
T358

FIGURE 18.—Ground plan of the cellar of the Commissary Storehouse, Fort Stevenson, showing excavations of 1951.

The brick-lined cellar of the Commissary Storehouse was, apparently, the only cellar at the post so built, and was of more careful design than the earth cellars of other buildings. This cellar must have been built at the time of original construction of the building (1873), and had been done with care and some skill in bricklaying. The brick were common red brick that had been shipped to the post for construction purposes, and were indistinguishable from those used elsewhere in chimneys. The brick masonry of the walls of this cellar had been laid four bricks wide, the stretchers, lengthwise with the course of the wall, provided with additional courses of headers at intervals. Throughout the remnants of the walls seen in excavation, only the lowest courses had been preserved, the upper portions having collapsed (or having been pushed) into the cellar, probably after the fire that destroyed the building, and having been covered with other fill (pls. 42, 43). Portions of the east and south walls had been preserved to a height of eight courses above the level of the cellar floor, and at these points it was observed that the fifth course, counting from the floor level, was a course of headers laid at right angles to the course of the wall (pl. 43, *b*). The bricks in these walls had been laid in lime mortar.

The floor of this cellar had also been made of common fired brick (pls. 42, 43). In this instance, the bricks were laid flat, and lengthwise with the long axis of the cellar (i.e., north-south). So far as could be determined, the masonry of the floor was not laid with lime mortar, and it was probable that, as in other similar uses of common brick, they were here simply laid level on a smooth sand base. Although the brick had been laid lengthwise with the cellar, at one point near the south wall one row of brick ran east and west, for no apparent reason, and this may have been merely accidental or capricious.

Near the north-south midline of the cellar floor were three recesses, each approximately 10 inches square, which showed the original location of supports for the ceiling of the cellar (and flooring at ground level), as well as their dimensions (fig. 18; pl. 42, *b*). It is probable that these posts were originally used in pairs, and that another row was present in the unexcavated portion of the cellar. Similar to these floor recesses near the midline were others near the walls, which probably served likewise for floor supports (fig. 18; pl. 43, *b*). The dimensions of these wall recesses (and hence of the timbers placed in them) were approximately 2 inches by 12 inches. In both the midline recesses and those along the walls, charred wood fragments and decayed wood were present. Between the recesses along the east wall of the cellar (the only portion of wall sufficiently well preserved to show this detail), a lime whitewash had been applied to the brickwork. Near the floor recesses in the middle of the cellar, one badly charred timber, which was probably not larger than 2 inches by 4 inches in original dimensions (fig. 18; pl. 42, *b*), lay on the floor. Nothing could be learned of its original length, but it doubtless had originally spanned the distance from wall to midline post—i.e., more than 8 feet.

The ceiling of this cellar (the flooring at ground level) was earth filled, to serve as insulation for perishable foods kept in the cellar. In the much-disturbed fill that had accumulated in the former cellar, traces were frequently seen of such earth levels, associated with charred wood, but such was their contorted state that no detail could be learned of this earth-packed ceiling. It was also known that in 1879 this building had a furnace, and among objects excavated, found lying on or near the original brick floor, were parts of a sheet-steel furnace, probably that which had been in this position at that time (pl. 49, *a*). With this were such furnace tools as a scoop shovel and a furnace shaker, much damaged by the fire. Lying on or near the floor in various places beneath the fire debris were many large fire-broken sherds of heavy earthenware ("stoneware") which had been in the cellar at the time the building was destroyed and had been used for food storage.

After the destruction of the building by fire, the cellar of the Storehouse had been filled, in part intentionally, probably to keep out stock and children, with gravel, sand, earth, and large boulders, and the area had been used for a dump. Much of the refuse accumulation found on excavation of the cellar was of recent origin, and clearly from the period following 1897, during which the site of the military post was in use as a farm. The only demarcation of the fill in the cellar area was an irregular line between the building debris and the later intentional fill. In some places this separation was marked by the irregular line of debris derived from the original earth-filled ceiling mentioned. This irregular line helped in separating older materials, beneath, from more recent materials, at a higher level. Of the objects encountered, only those that appeared to be older were saved intact; some of the more recent materials were also collected, and were marked as "surface" collections. In the fill was a large accumulation of farm rubbish of all kinds, particularly metal, glass, and earthenware, and among this rubbish was a large mess-kitchen range of Army style, that had survived probably at least since the time of the use of the buildings of the fort by the Indian school (pl. 49, *b*). The size of this range is such that it would scarcely have been used in a farm kitchen.

On the evidence of excavation, and from documentary record, it is known that the Commissary Storehouse differed materially in construction from other major buildings of the post in being balloon framed rather than of the more typical adobe-brick and timber design. Though no data are available concerning chimneys or their placement, they must have been present, and doubtless resembled those of other buildings. Concerning the timbers there is little evidence aside from the inference that, as elsewhere, the heavier timbers and flooring were of local cottonwood, the other lumber and millwork having been obtained, as were the fired brick, by importing, probably from St. Louis, Mo.

The architectural design known as balloon framing is of special interest, this one major building at Fort Stevenson having been made in that style. This design, first employed, apparently, in American architecture about 1850, and particuarly in the West, has now so long been employed that the technical term itself has been nearly forgotten, while the older style, known as braced framing, is now probably extinct in American architecture (Gidieon, 1949, pp. 281–289; Mathews, 1951, vol. 1, p. 67). The major difference between the two styles is in the dimensions of the timbers, and the way in which they were used. The braced frame, represented elsewhere at Fort Stevenson, employs heavier timbers (frequently 4 by 4 inches or 4 by 6 inches) fastened by mortising and pins; the balloon frame employs lighter timbers (usually 2 inches by 4 inches) held together solely by spikes and nails. The balloon-frame design is correlated with the rapid settlement of the Western United States, the availability of dimension lumber even in areas remote from timber production through the development of the railway transportation system, and the adaptability of this lumber to the needs of the settler on the vanishing frontier. It is entirely possible, in this instance, that the lumber used in the Commissary Storehouse had been received by rail at Bismarck (reached by the Northern Pacific Railroad in 1873), and from that point hauled by wagon to Fort Stevenson. By 1873, shipment of lumber long distances by water had probably become impractical.

SOUTH OFFICERS' QUARTERS

Three sets of Officers' Quarters are shown on the Ground Plan of Fort Stevenson, of 1879, arranged in a row along the west side of the parade ground and facing the Guard House, to the east (fig. 15). The plan does not identify these quarters separately, but it does show the middle building of the group as a single unit, the other two as double units—i. e., for two families each. The description of these quarters provided in the inspection report of the same year gives a good account of the construction of these private dwellings, and clearly indicates that the middle unit (the single dwelling) was that provided for the commanding officer of the post (Mattison, 1951, pp. 32–33). For convenience, therefore, the three sites are here designated as North Officers' Quarters, Commanding Officer's Quarters, and South Officers' Quarters. Excavations were conducted at the sites of the South Officers' Quarters and of the Commanding Officer's Quarters.

In addition to these permanent buildings for officers' homes, temporary quarters of logs were erected in the immediate vicinity of the more permanent buildings, and were used until the latter were finished. These cabins are shown on a sketch made by de Trobriand in May 1868 (de Trobriand, 1951, opp. p. 196). The location of these temporary log buildings with respect to the permanent buildings is somewhat more clearly revealed on a plan of the post published in 1870 (U. S. Army, Surg. Gen. Off., 1870, p. 394). They were placed in the same part of the whole post as the permanent quarters, but to the north and south of them, and on the site of the Commissary Storehouse, subsequently built. One of these log structures is visible on a photograph made after the abandonment of the military post (pl. 33). There is, however, no mention of them in either the inspection report or plan of 1879.

The permanent officers' quarters were built during the summer of 1868, and at least the Commanding Officer's Quarters were occupied in October of that year (de Trobriand, 1951, p. 340). It seems probable that the other Officers' Quarters were completed about the same time. From the mention of the sale of three separate officers' quarters in December 1897, it is probable that the South Officers' Quarters, one of the three, survived until that date. It was probably demolished soon thereafter, leaving little evidence of its original construction above the footings themselves.

The site of the South Officers' Quarters (fig. 19; pl. 44, *a*) was completely obscured on the surface of the ground when first approached, and was covered by a continuous heavy sod with few weeds. Excavation was begun by trenching at the assumed location of the southeast corner of the building, according to the plan of 1879. It soon became apparent that an error had been made in preparing that plan, since the corner sought was found approximately 14 feet north of the point at which it had been shown. (The photostat of the ground plan of 1879, in National Park Service Region Two and Missouri Basin Project files, is reduced one-half from the original. The original seems to have been somewhat unskillfully drawn, and may be somewhat distorted as a result of shrinkage of the cloth; but this does not account for the error in measurement of the parade ground.)

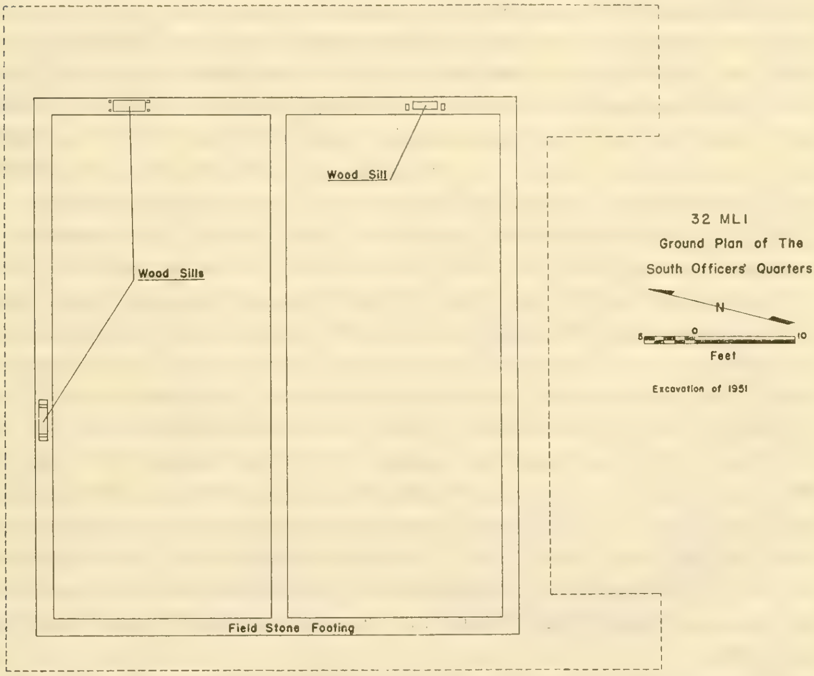


FIGURE 19.—Ground plan of the site of the South Officers' Quarters, Fort Stevenson showing excavations of 1951.

Excavation showed that the remains of this structure had been obscured by a heavy mantle of mixed earth, containing bits of building debris such as broken fired brick and fragments of lime mortar. There was also a great deal of fine gravel; this was probably introduced on the site of the South Officers' Quarters at the time of the excavation of the cellar beneath the Commanding Officer's Quarters immediately to the north. (A break in the masonry footing of the south wall of the Commanding Officer's Quarters, on the side toward the present building, and an apparent cellar entrance depression, suggests that the excavated material was moved directly out over the site of the South Officers' Quarters.) Two small trash pits had also been dug at the site, at some time after the destruction of the building, and these contained recent refuse. A fence running across the site of the building was not removed during excavations.

The excavated remnants of this building did not differ materially from those previously found at other building sites, except that this site had been more extensively altered, through the removal of almost every part of the original building except for the lowermost parts of the stone masonry footings (fig. 19; pl. 44, *a*). At no point was the footing preserved to its full original height, and the midline footing had been completely removed throughout a great part of its course. The stone masonry here, as elsewhere about the site of the fort, consisted of field stone, sometimes cracked to provide a face, and this face placed toward the inside or outside surface of the footing. These larger stones had then occasionally been chinked and fitted with spalls and smaller rocks. At no point had this footing been placed in lime mortar, so far as could be seen in the remaining portions.

It became clear on excavating that the building had been completely removed, probably soon after its purchase in 1897 and at a time when it was in sound condition, since the only timber remains found were those of three decayed sills, of heavy plank, probably native cottonwood (fig. 19). These sills were probably parts of the frames of wooden ventilators that had given access to the space beneath the original floors of the building. They had been placed at too low an elevation to have served as the base for door sills, and the plan of 1879 shows the two front doors (leading to the separate parts of the building) near the midline of the whole, rather than in the position in which the wood was found. No other timber remains suggested anything of the original architectural detail of the building, nor was any common fired brick found that could be related to the original chimneys.

Adobe earth was encountered in excavation at this site, but no adobe brick (fired or unfired), nor any other evidence of fire damage to the building. Smaller objects found were of little assistance in tracing the history of the structure and were, in large part, clearly of recent origin.

Architectural evidence concerning the South Officers' Quarters, from excavation and contemporary record, while scanty, suggests that this structure was similar in every way to the Commanding Officer's Quarters, the site of which was subsequently excavated, and for which more data are available. Like it, this building had been set upon a stone masonry foundation, it was also a frame structure in which adobe brick were used (probably in somewhat different fashion from that seen in larger buildings such as the Hospital and Barracks), and the building had been provided with fireplaces and chimneys, constructed of common fired brick. As in other buildings of the whole post, the common brick, as well as the lighter lumber and millwork used here, had doubtless been imported, only the heavier timber being of local production, like the stone of the masonry and the adobe brick.

COMMANDING OFFICER'S QUARTERS

The Commanding Officer's Quarters, the middle building of the row of officers' homes, was located on the west side of the parade ground, directly opposite the Guard House, and was a single dwelling (fig. 15). This building, during the winter of 1868–69, was the home of General de Trobriand, at that time commanding a military district which, with Fort Stevenson, included Forts Totten and Buford. It was during de Trobriand's regime that much of Fort Stevenson was built, and much of his entertaining and historically valuable journal was probably written in this building.

Although the construction of the Commanding Officer's Quarters had been begun late in 1867, it was not possible to complete it until the following summer, and it was first occupied in October 1868 (de Trobriand, 1951, p. 340). After serving as the home of various post commandants, the building also served as the superintendent's residence during the period of the use of the former post as an Indian school. About the year 1897 it became the home for the farm established on the site. Information concerning private ownership of the site of the post, preserved in records of the Register of Deeds, McLean County, at Washburn, might afford some further knowledge of the later history of the building. A photograph of this building, probably taken about 1910, during the period of the use of the former quarters as a farm home, is owned by Mrs. Falstad, of Garrison. This preserves some details of the exterior, as it then looked, which are not visible on earlier photographs or sketches. After having served various farm families, it was used as a granary, and was finally torn down about 1945, the last of the original buildings of Fort Stevenson. At some time during its use as a private home, a cellar was dug beneath it, and portions of the masonry footings removed. It is hardly surprising that when it was demolished, it was said that nothing could be done to save the building.

The former Commanding Officer's Quarters (fig. 20; pl. 44, *b*), like most of the more important buildings of the post, had been built of stone, adobe brick and adobe mortar, and timbers, including millwork of various kinds, and had had plastered walls and ceilings. Traces of most of these elements were found on excavation, which was made at the site after it had been a ruin for only 6 years. When first approached, the site was covered with a mass of dense, tall weeds surrounding a cellar hole filled with great quantities of building debris, particularly, large quantities of broken plaster. Various remnants and bits of timber and millwork were also lying about, which had been overlooked or discarded when the house was torn down.

The weeds and rank grass that covered most of the site, except for the cellar area, were first removed, revealing the contours of the surface. Narrow trenches were then dug along the exterior of the exposed stone masonry of footings and other elements surviving in place from the original structure. The cellar is said to have been made after the building had been in use for many years, and it was for that reason left unexcavated (pls. 44, *b;* 45, *a*). No other major architectural changes in the original were noted, in excavation, since all parts of the structure above the footings, except for portions of the main building sills, had been removed from their places at the time of final demolition. Within the interior of the structure, excavation was carried down to the original ground level upon which the building had been placed, as far as the margin of the recent cellar mentioned.

As had been the case with previous sites excavated, the deposit covering the site of the Commanding Officer's Quarters was derived primarily from the materials originally comprised in the building itself, with little visible additions such as wind-deposited soil. These materials included adobe brick, adobe mortar, common fired brick, lime mortar and lime plaster, and occasional wood fragments or larger timbers, plank, or moldings, ordinarily much decayed and rarely in their original positions. Various samples of wood members were obtained. Among these were two cottonwood door sills, much worn with use, a window casing, a portion of a second window casing bearing the manufacturer's stencil and the shipping address of the Acting Assistant Quartermaster of the post. There were parts of a door frame, and a complete door, which appears to be of an older style of millwork, and had probably been at the post from the period of the military occupation.

No evidence was seen in the excavation of this site of any fire-damage to the original structure. Though outlines of adobe bricks

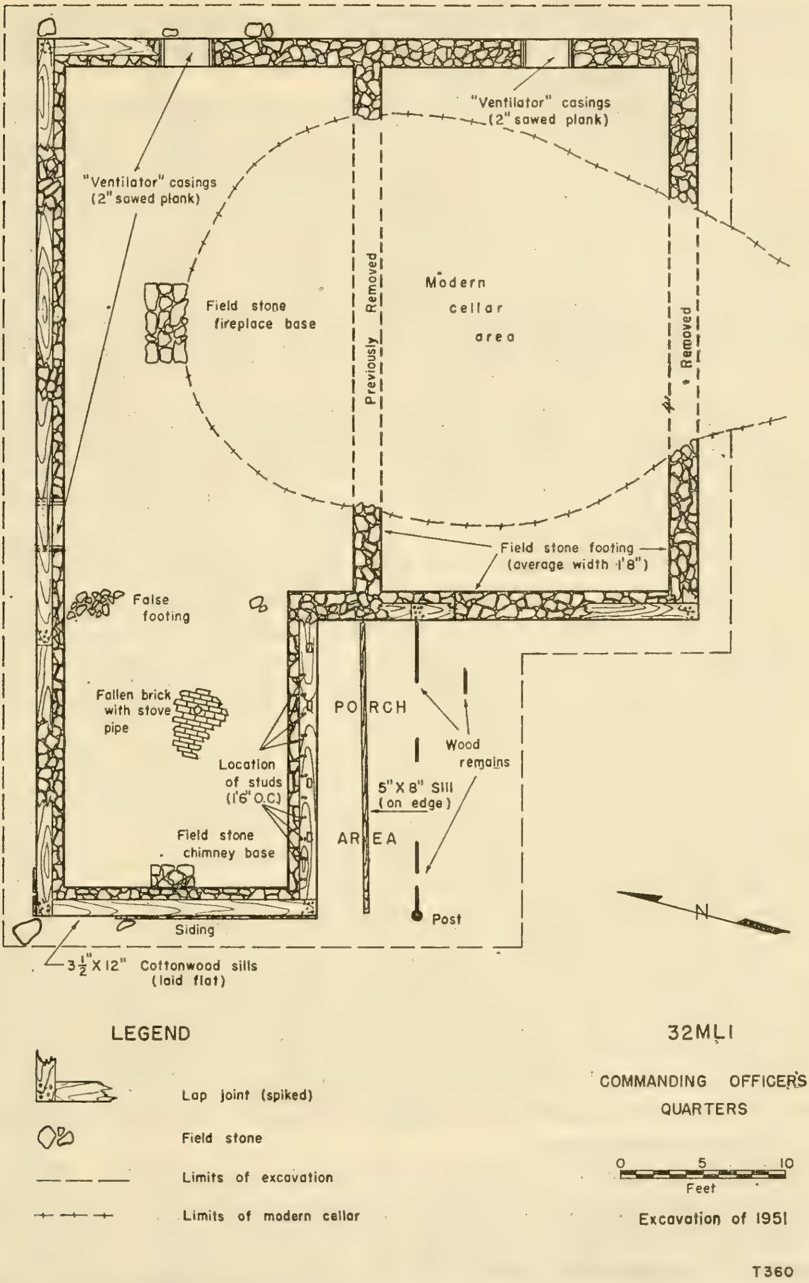

"Ventilator" casings (2" sawed plank)
"Ventilator" casings (2" sawed plank)
Field stone fireplace base
Previously Removed
Modern cellar area
Removed
Field stone footing (average width 1'8")
False footing
Fallen brick with stove pipe
PORCH
AREA
Wood remains
Location of studs (1'6" O.C.)
5"X8" Sill (on edge)
Field stone chimney base
Post
Siding
N
3½"X12" Cottonwood sills (laid flat)
LEGEND
Lap joint (spiked)
Field stone
Limits of excavation
Limits of modern cellar
32ML1
COMMANDING OFFICER'S QUARTERS
0 5 10
Feet
Excavation of 1951
T360

FIGURE 20.—Ground plan of the site of the Commanding Officer's Quarters, Fort Stevenson, showing excavations of 1951.

in adobe mortar and traces of their use were frequently observed, it was impossible to measure or collect specimens of these unfired bricks because of their disintegrated state.

The stone masonry of the footings here was apparently identical with that previously described for other building sites. Somewhat greater care had, however, been given to the appearance of this masonry than in the case of the other buildings, some of the work having been carefully fitted and mortared (pl. 44, *b*). The remains of a "false footing" of stone were found at the site of the rear wing of the building, on a projection northward from the west footing of the main part of the building (fig. 20; pl. 45, *a*). The building, as completed, had been provided with a wing, extending to the rear (west) from the north half of the whole, which had served as a kitchen (figs. 15, 20; pl. 44, *b*). At the position of the false footing, a complete footing had once been constructed, or partially completed. It seems probable that it had originally been intended that the whole building be symmetrical, and that after a part of the footing in this position had been finished the plans had been changed, perhaps by de Trobriand himself, by extending the building lines to provide a kitchen wing. Work on the footing may have been stopped, and the remnants of the masonry here consisted of but a few smaller rocks and spalls. This was the only trace found of a footing for any partition within the building, aside from that at the midline.

At three points along the course of the exterior footing of the building were openings through the masonry, two along the east (front) line, one along the north; none was found elsewhere (fig. 20). These openings were furnished with wooden frames of 2-inch plank, and the openings were apparently ventilators, to allow circulation beneath the original floors. The frame in the opening of the north footing was much decayed. Those along the front were in a somewhat better state of preservation, and may have been better protected by the porch that had originally extended across the front of the quarters. The ventilators were not uniform in dimensions, but varied with the elevation of the original ground surface adjacent. The frame in the north footing still carried the original building sill above it, though both were much decayed.

Within the south half of the site of the Commanding Officer's Quarters, all evidence of details of original construction had been removed during the construction of the recent cellar. Somewhat more was found in the north half of the site, and details found there had doubtless been repeated in the south half. Midway between the front wall footing and the false footing mentioned were the remnants of a fireplace and chimney base (fig. 20; pl. 45, *a*). This was a stone masonry footing, similar in construction to the footings of the building proper, but partly damaged or reduced in size during the construction of the cellar. The original east, north, and west faces of this fireplace footing had been preserved intact. This footing was not preserved to its full original height, but this level would have been approximately the same as the height of the floor, presumably immediately above the top of the main-wall footings. From the description of this building in the inspection report of 1879, this interior fireplace footing must have served the parlor room, which lay just to the east and on the front of the building, as well as the dining room, just to the rear (west) of the parlor. Near the fireplace footing lay a quantity of broken fired brick, probably remnants of the original chimney from the fireplace. Most of the brick originally in use here must have been removed at the time the building was demolished.

At the site of the "kitchen" wing, at the rear of the north half of the Quarters, was a second small chimney base. This lay along the footing of the west wall of the wing, and was of the same type of rough stone masonry (fig. 20; pl. 45, *a*). Though not preserved to full original height, this base rose above the elevation of the exterior wall footing against which it abutted. Clearly related to this chimney base was a section of fallen fire-brick masonry, found in the interior of the wing. This section had presumably fallen at the time the building was demolished, and lay with the interior plastered surface downward. The section had been kept intact because of the fact that it was a part surrounding a chimney hole and metal sleeve.

Along a large part of the footings of the exterior walls of this building the original building sills of cottonwood were still in place. The portions best preserved, upon which any detail could be seen, were those along the north footing and along the footings at the rear wing (pl. 46, *a*, *b*). These sills measured 3½ inches in thickness, 12 inches in width, and had been laid flat. They were, however, much decayed, and had probably been somewhat compressed during use by the weight of the building resting upon them, from an original thickness of 4 inches. It was impossible to measure the complete length of any of these sills except for one that lay on the west footing of the rear wing; this timber was approximately 16 feet long (pls. 44, *b*; 45, *a*).

These sills had been joined by overlapping joints, and at four of the six corners of the footing and at one point along the north footing, these joints could be observed. The joint along the north footing was the best preserved, and in this instance the overlap of one timber upon the other was approximately 10 inches deep (pl. 46, *b*). At the corners of the masonry, the sills had been overlapped their full width (12 inches), at right angles (pl. 46, *a*). This amount of overlapping had doubtless varied according to convenience from place to place in construction. These lap joints had been spiked with six to eight nails. At some points along the exterior of the sills, fragments of the original siding of the building were seen, but these were not uniform in either materials or dimension, and probably represent casual repairs made on the building at various times.

The sill found in place on the south footing of the rear wing provided some detail concerning the original timber construction of the building. This sill showed four excavated areas or mortises, two each approximately 4 by 4 inches and 4 by 6 inches, and extending through the sill vertically. These holes, made to receive vertical timbers, the braced frames of the walls proper, were not regularly placed, as might have been expected. These mortises were the only ones seen on any of the sills still in place, and while vertical timbers similarly placed doubtless continued about the whole building, no concrete evidence of their original position elsewhere was found, in either mortises or spiking.

In addition to the mortise holes in the sills mentioned, some further knowledge of the construction of this building was available from groups of spikes along the inner edge of this sill, approximately 1 foot 6 inches on center, which showed the original location of vertical studding of the inner face of the wall. These studs, to which the lath and plaster had been fastened, had probably been 2- by 4-inch dimension, or larger. Many fragments of lath, as well as great quantities of broken plaster, were found in the building debris on the site. The plaster was white or painted in various colors, and some larger fragments were collected. The colors include red or pink, green or blue, and a shade of brown. The fragments were so scattered, however, that it was impossible to be certain of color or colors that had been used in any particular room from the fragments found within any part of the whole site.

Adjoining the kitchen wing and on its south side were the remnants of a much-decayed wooden porch floor (pl. 47, *a*, *b*). No attempt had apparently been made to remove this when the building was demolished. The porch floor had been built with two sills, but that at the outer edge of the floor was so badly rotted that only traces of the original wood had been preserved. The second or inner sill was found in place, midway between the outer and inner edge of the floor (fig. 20; pl. 48, *a*). This second sill was 5 by 8 inches, set on edge, and was actually two separate timbers laid end to end, the longer originally measuring slightly more than 6½ feet in length. On these sills, at right angles, floor boards had been laid, nailed in place, in two layers. The lower floor boards were 1- by 2-inch dimension, the length averaging 3 feet, but of miscellaneous materials, some being plain, some tongue-and-groove lumber (pl. 47, *b*). After this floor had been in use for some time, a second floor had been put down over it, also at right angles to the sills, the boards used having been 1- by

3-inch tongue-and-groove lumber, and from 5 feet 6 inches to 5 feet 8 inches in length (pl. 47, *a*). It seems unlikely that either of these floors was the original, and the floor remains found were probably replacements. It is known, however, from the report of 1879, that the Commanding Officer's Quarters had been furnished at that time with an "enclosed porch" at the kitchen wing, and the dimensions of the original as given, 6 by 18 feet, are approximately the same as those of which remains were found.

In addition to the construction materials collected, such as wood and plaster fragments, numerous objects were found in excavation of this building site. The greater part of these pertained to the period of the occupation of the former dwelling as a farm home rather than to any earlier period. In the area beneath the rear porch were numerous items of some interest, particularly various children's playthings. Elsewhere within the footings of the building clear evidence was found of the late use of the building as a granary, in small grain and straw among the building debris. On the site of the kitchen wing were the skeletal remains of small animals (rats, mice, cats, and domestic fowl), some of which were doubtless also introduced in the site during the use of the building as a granary.

The Commanding Officer's Quarters, like the other major buildings of the post, was thus set upon stone masonry foundations, the walls having been of braced framing, packed with adobe brick, rather than of massive adobe-brick masonry as in the case of the Barracks and Hospital and, probably, other larger buildings of the post. Some specimen material of millwork from the building is now available. Details of front, side, and rear elevations of this building are available in sketches by de Trobriand and in various photographs (de Trobriand, 1951, opp. p. 356). Only one major architectural change is known to have been made in this structure after its completion, that of the introduction of a cellar, and the removal of portions of the original footings at the same time.

The description of the buildings of Fort Stevenson, given in 1879, which records that they were "of adobe brick set up in frames on rock foundations," is particularly well illustrated in this instance, in which evidence had been preserved of the "braced framing" of the original. The mortises mentioned revealed the design of the timber construction, and between this framing adobe brick had been used as packing or lining. It will be recalled that at the site of the large public buildings previously excavated, the Hospital and the South Barracks, no clear evidence of the original framing had been preserved, whereas it was seen, by reason of the accidental firing of masonry, that solid masonry walls of adobe brick had been employed there. Thus, despite the phrasing of the inspection report, there is evidence that there were some variations in the design of the buildings of the fort, particularly with respect to buildings in which both timber and adobe were employed. It seems probable that no detailed plans for these buildings were prepared elsewhere, as at departmental headquarters, and that actual design and construction were left largely to the discretion of field officers.

OTHER SITE UNITS

The ground plan of Fort Stevenson, of 1879, shows the location of several sinks or latrines, but no other details of these necessary buildings have been preserved. The position of those originally located at the rear of the buildings on the north side of the parade ground had been completely obscured by many years of cultivation in that part of the site of the post, but several smaller depressions were still visible at the rear of the buildings on the south side, near the edge of the bank (fig. 15). These depressions were apparently undisturbed since the pits were abandoned, and were clearly marked by a luxuriant growth of long grass as well as by the actual contour of the ground at those points.

Two of these pits were excavated, at the rear of the site of the Hospital and in the approximate location of two shown in 1879. For convenience, these two sites were designated as Latrine No. 1 and Latrine No. 2. Excavation provided groups of informative objects, the provenience of which is clearer than for some objects excavated at other sites about the post. The two pits appear to have been used during successive time periods—during the military period (No. 2) and during the subsequent Indian school period (No. 1). Little was preserved that indicated anything of original construction, aside from the pits themselves.

Among the buildings mentioned as having been sold at auction in 1897 are various "closets," and the privy buildings originally standing in this location were doubtless moved at that time or subsequently. There had been some slump inward from the upper edges of the pits, and the dimensions of length and width shown on the accompanying plan were taken at the midpoint of the earth walls of the pits. These walls had originally been very nearly vertical, but the pits were somewhat smaller at the bottom than at the surface.

Latrine No. 1 was an unlined pit, which had been dug to a depth of approximately 3 feet 6 inches below the present ground surface, and measured approximately 8 feet long (east–west) by 4 feet 6 inches wide (north–south). The original pit had penetrated fine-grained surface soil into subsurface gravel. There had been no reinforcement of the earth walls, and no construction materials were found that might have been derived from the building that had stood over the pit. The various objects found there clearly demonstrated that the pit had been in use primarily (perhaps exclusively) during the years when the former Hospital had served as an Indian school. Among them were a slate pencil, boys' shoes, and fragments of knitted stocking fabric, small black felt hats, and the like.

Latrine No. 2 was a somewhat larger pit than the other excavated, and had been dug to a depth of approximately 6 feet below the surrounding surface. This pit measured 14 feet 5 inches in length (east–west) and 5 feet in width (north–south). The pit had also penetrated to subsurface gravels, and in this case the earth walls had been shored with planks set on end (pl. 48, *b*). This cribwork, though almost completely decomposed, appeared to have been of 1-inch stock, of random width as great as 9 inches, and had doubtless originally been secured to the privy at the upper ends of the planks. It is possible that the building may, in part, have been made of adobe brick, since adobe bricks and adobe mud were seen near the edges of the pit at the surface, apparently in original position. These bricks may, however, have been merely banked against the building.

Objects found in excavating Latrine No. 2 showed quite clearly that the pit had been in use at an earlier period than the other, and during the military period. Several military objects were obtained, with fragments of men's shoes, fabrics, and personal possessions. This pit was doubtless intended for the use of the Hospital personnel and patients, and several Hospital Department, patent medicine, and drug bottles of glass were obtained there, as well as the base of an older type of glass whiskey flask.

The fill in neither of these pits revealed anything significant, in structure or composition. In both instances, lime had been used from time to time while the pits were open, and gravel and waste soil, including some fine lignite, had also been used to fill the pits.

OBJECTS RECOVERED

In the following account of objects recovered in excavations at the site of Fort Stevenson, intended chiefly as a descriptive report, the objects have been grouped as far as possible according to logical relationships, rather than according to the nature of the materials of which they were made. It has not always been possible, however, to achieve a completely satisfactory arrangement of such a large and miscellaneous group of materials. Many objects obtained had served more than one purpose and have relationships other than those of the most important or obvious. Where several relationships have been observed, in different directions, these have been mentioned.

The various uses to which the site of Fort Stevenson had been put—military, Indian school, and agricultural—merge imperceptibly into one another, and many of the objects described here have no clear-cut provenience. Several kinds of military objects obtained are obviously derived from the period of the military use of the post, just as the few materials derived from the Indian school belong to a subsequent period and some agricultural objects to still another. But much of the material of the specific periods is not clearly related to one or another. An example is the marked white earthenware, probably first used in quantity at the site during the Indian school period. The firm which manufactured most of this, Burgess and Campbell, of Trenton, N.J., began operations in 1879 and could, presumably, have supplied the enlisted men's messes of the military post. It seems unlikely, however, that the military messes would have been furnished with such tableware and it is known merely that the pieces were in the former South Barracks at the time the building was in use as a boys' dormitory, when the structure was burnt in the summer of 1894. Metal mess gear, which may have been used at either or both the military and school messes, was also found at this site.

It is manifestly impossible, from the fragments that have survived from such a site as this, to reconstruct more than a small part of the life at a military post, subsequently used as an Indian school, and last of all as a farmstead. This is particularly true by reason of the fact that what has survived has ordinarily been preserved only by accident. In this respect, of course, the site of Fort Stevenson is like many archeological sites both historic and prehistoric. On the other hand, materials are now available from this site that reveal bits of the physical history of the post nowhere else preserved, or preserved less adequately. One would scarcely expect to find in any document that dominoes was a game played, and perhaps favored, by soldiers or Indian boys who once lived at the post. The example is a trivial one, but archeological investigation frequently contributes such sidelights on more formal history.

Interestingly enough, the great bulk of the objects obtained at Fort Stevenson is derived from essentially modern industrial processes, and are machine made; practically nothing was found, even for later periods of the use of the site, that can be said to represent true handcraft, or even local improvisation. This is scarcely surprising, since the needs of the post could be, and were, supplied from industrial centers by transport, even from a great distance. Supplies of all sorts were at first received by steamboat—even, as has been seen, flooring and millwork, fired brick, and similar bulky construction materials. After the completion of the Northern Pacific Railroad to Bismarck, in 1873, transport was probably largely by wagon from that point, rather than by river, as previously. Though steamboats continued in use for some time after this date, they probably became less important thereafter for transport.

During the development of industrial manufactures in the latter part of the 19th century, new and wider applications and uses were rapidly made of raw materials previously of restricted use or but newly invented. Some examples of both older and more recent industrial processes are here represented. An example is the replacement of the use of horn, bone, shell, and other natural raw materials by artificially hardened rubber for such objects as combs, brush handles, and the like, following the development of this industry attending Goodyear's discovery and patents of 1851 and other dates. Materials such as the present collection thus reveal something of the rapidly changing character of modern industrial manufacture, to which scant attention has sometimes been paid.

In the following section the objects recovered are listed in the manner of an annotated catalog. The class of object is given first and within the class the individual objects are grouped by type. Specimen catalog numbers are given in parentheses immediately following the object referred to. If the object, or one specimen of the group of objects, is illustrated a reference is made to the illustration, also in parentheses. A total of 6,099 specimens of all categories were recovered from the site and these have been cataloged under 2,134 catalog numbers. The catalog numbers are less than the actual number of specimens because of occasional "lotting" of several identical specimens under a single catalog number (e.g., several fragments of window glass recovered from a single findspot are grouped under a single catalog number).

MILITARY GOODS

UNIFORM AND INSIGNIA:

Cap (No. 1823). Six fragments of black leather visors for small forage caps, used in the U.S. Army prior to about 1898.

Shoulder scales (Nos. 965, 966, 1245, 1246, 1283–1285, 1517, 1856) (illustrated example pl. 50, *w*). Parts of the brass "shoulder scales" worn by enlisted men prior to about 1872 for dress occasions (4 to 4¼ inches in width; 3½ to 4 inches in depth). The scale jointed, or overlapping. No complete specimen was obtained. (U.S. Army Quartermaster's Dept., 1889, pp. 47, 50.)

Insignia (Nos. 632, 639, 1118, 1287, 1833). A brass hat ornament (No. 1833), die stamped with the national emblem (spread eagle), similar in design to that still used by commissioned officers. The specimen is badly broken but bits of a greenish fabric and some coarse fiber (padding) still adhere to it. This type was used for dress until about 1872. It was worn with the stiff black felt hat, on the right side against the brim, which was looped up. Both officers and men at this time also wore the insignia of the branch of service (e.g., the infantry bugle) on the less formal forage cap as well as on the front of the stiff black felt hat.

A die-stamped brass numeral "1" (No. 632), probably a regimental number (11/16 inch in height). Companies of the 31st Infantry were at Fort Stevenson in 1867, and of the 17th Infantry in 1870 and 1871 (Mattison, 1951, p. 24). A member of either of these regiments may have lost this numeral.

A die-stamped brass numeral "6" (No. 1287), probably a regimental number (½ inch in height). Companies of the 6th Infantry were at the post from 1872 to 1879 (Mattison, 1951 a, p. 24).

UNIFORM AND INSIGNIA—Continued

A die-stamped brass letter "K" (No. 639) (pl. 50, *h*), probably a company letter (1 inch in height). De Trobriand refers to Co. K (presumably of the 13th Infantry) as being at Fort Stevenson in 1868 (de Trobriand, 1951, p. 341).

A die-stamped brass bugle (No. 1118) (pl. 50, *l*), a cap ornament (3½ inches in length). The bugle was the original infantry insignia until about 1875 when the crossed-rifle infantry insignia was adopted (G.O. 96, AGO Nov. 16, 1875).

Buttons (Nos. 344, 956, 1478, 1854/1–2) (illustrated example pl. 50, *g*). Die-stamped brass uniform buttons made in two parts with brass loops. The size of the specimens obtained (¾ inch in diameter) suggests that they were for use on the dress blouse. Each has the national emblem (spread eagle) without letters on the shield. This was the style used by enlisted men. Only one (No. 1854/1) is marked with the manufacturer's name: "Horstmann Bros & Co./Phil[adelphia]." This company, and the Scovill Co. of Waterbury, Conn., were important manufacturers of such items during the 19th century. Similar specimens have been excavated at the sites of Fort Laramie, Wyo., and Fort Ridgely, Minn.

Shoulder-sling plate (No. 1288) (pl. 50, *i*). A die-stamped brass plate, on a lead base with iron loops molded into the reverse, for attachment to the cartridge-box strap, which passed over the shoulder (2½ inches in diameter). The design, within a border, is the national emblem, the eagle facing to the right. This eagle plate was used for combat until 1872 and for full dress until 1881 depending upon the kind of cartridge box carried.

Belt buckle (No. 1892). A brass uniform buckle, oval in outline, with hooks for attachment to belt or cartridge box (1¼ inches in height). The buckle bears the letters "U.S." within a border. Similar specimens have been excavated at Fort Laramie, Wyo.

Canteen (No. 1133). Stamped sheet-metal canteen; round, with concentric ribbed design (8 inches in diameter). This type was superseded, about 1898, by one with a smooth surface covered with felt and canvas.

Spur (No. 1640) (pl. 50, *k*). Portion of steel spur with geometric design. Presumably of military origin.

REGIMENTAL PROPERTY:

Guidon (No. 1824). Fragment of wood with small hole and brass ferrule (1 inch in diameter). Probably the tip of the shaft of a guidon.

Mess forks (Nos. 916, 917). Silver-plated table forks, of trifid handle design. Both specimens have been damaged by fire, and are identical except for markings. One (No. 916) (pl. 50, *p*), is die stamped on the obverse of the handle: "Comp C 6th Reg/U.S. Infty 1868." The other (No. 917), is die stamped on the reverse of the handle: "Wm. Rogers, Smith & Co. A[]." Companies of the 6th Infantry were on duty at the post from 1872 to 1879, and this mess equipment had doubtless been used elsewhere previously.

ORDNANCE:

Cartridges and bullets (Nos. 7–20, 90, 343, 399, 400, 476, 538–547, 959–963, 987, 1119–1128, 1236, 1237, 1356, 1475, 1525, 1609, 1661, 1721, 1763, 1808, 1834, 1858, 1882, 1883) (illustrated examples pl. 50, *a–f*). A detailed analysis of these specimens, by Dr. Carlyle S. Smith, is included in the present report as an Appendix. This analysis was published in the Plains Anthropologist No. 1, May 1954, but is repeated here for reference in its context with other items from Fort Stevenson.

ORDNANCE—Continued

Cap box (No. 1855). A shallow, round, brass box (lacks cover), to hold primers (1½ inches in diameter; 7/16 inch in depth).

Worm (No. 1521). Fragment of steel worm for cleaning rifle barrel.

Ramrod (Nos. 1606, 1867). Portions of two ramrods. One (No. 1867) has the regularly designed end with an eye to hold a cleaning patch (16¼ inches in length). Used with model 1864 or 1866 rifle.

Scabbard (No. 1857/1–2) (illustrated example pl. 50, *j*). Fragments of the butt ends of sword or bayonet scabbards. Brass ferrules (3¼ inches in length) are riveted to the leather fragments.

MEDICAL:

Bed bracket (Nos. 60, 566, 701). Steel brackets which were fastened to the end-frames and supported the springs. Other specimens were found in place on end-frames (not collected). Steel cots were in use in the western military posts by 1874. These beds may not be strictly regulation equipment of the Medical Department.

Scissors (Nos. 563, 633, 634) (illustrated example pl. 50, *n*). Steel scissors, with small thumb and finger loops, apparently of surgical style.

Surgical probe (No. 1798) (pl. 50, *t*). Steel probe; shank ¼ inch diameter; tapers to fine point; end slightly curved (6 inches in length).

Syringe (Nos. 336, 514) (illustrated example pl. 50, *m*). Fragments of two glass urethral syringes, with glass plunger (3¾ inches in length; ½ inch in diameter). Venereal diseases are specifically mentioned as a problem in the post hospital records (Mattison, 1951 a, p. 22).

Gauze (No. 1820). Cotton hospital gauze is present among fabrics found in excavation of latrines.

Bottles and ground-glass stoppers (Nos. 515–517, 579, 580, 928, 1281, 1660, 1776, 1840–1842, 1847, 1848, 1852, 1853, 1878). Various containers of glass, clearly for medicinal or patent-medicine use, and ground-glass stoppers. Only one specimen found (No. 1840) (pl. 50, *x*) is known to have been of military issue. This is a round brown-green glass bottle, small mouth, containing approximately 32 ounces liquid, bearing letters molded horizontally on the side: "U. S. A./Hosp. Dept." An assortment of smaller dispensary-type, clear-glass, small-mouth bottles, round or square in cross section, are also probably of military origin. These are preserved in 6-ounce (No. 1842), 4-ounce (No. 1841), 2-ounce (Nos. 579, 1776), and 1-ounce (Nos. 931, 1875) size. Related to these, apparently, are three even smaller, clear-glass, small-mouth bottles, apparently for narcotic drugs, in view of their small size (Nos. 928, 1847, 1848) (illustrated example pl. 50, *n*). These small containers are only ⅞ inch in diameter, and range from 2 to 4 inches in height.

Clearly of use for patent medicines are several other glass bottles. Two, of brown glass, hexagonal in cross section, and containing approximately 16 ounces liquid (Nos. 1852, 1853), bear the following lettering molded on one face: "C. Lediard/St. Louis." The firm of Hastings, Lediard and Co., of which Charles Lediard was a member, is listed in the St. Louis directory of 1866, as manufacturers of "Lediard's mixed liquors and bitters." Lediard appears to have been a New York member of the firm (information from Missouri Historical Society, Apr. 9, 1952). Another bottle (No. 1281) (pl. 53, *o*) of brown glass, square in cross section and of approximately the same capacity, bears in recessed panels on two opposite sides: "Paine's/Celery Compound" (similar specimens have been excavated at the site of Fort Laramie, Wyo.).

SIGNAL:

Telegraph insulators (Nos. 1182, 1280) (illustrated example pl. 50, *v*). Two specimens, of green glass (2⅞ inches in diameter; 3¾ inches in height). The design of these two is slightly different, though both are of the type generally familiar today, having an interior molded thread for securing them to a threaded wooden pin fixed to a crossarm of the telegraph pole. One of the specimens (No. 1280) bears the molded lettering: "Cauvet's/Pat./July 1865." Published records show that a patent was issued to Lewis (or Louis) A. Cauvet, New York, N.Y., for such a telegraph insulator, presumably one of the first uses of glass for insulation in this fashion (U.S. Patent Office, Ann. Rep. Comm. of Patents for 1865, published 1867, vol. 1, p. 554 and illustration). On the evidence of the insulators found, and the description of the patent, this type was not covered with wood, as was sometimes the case on the frontier, largely to prevent destruction of the insulators by the Indians. It is known from the Ground Plan of Fort Stevenson, 1879, that the post was provided with a telegraph office at that period (Mattison, 1951 a, opp. p. 28).

INDIAN SCHOOL GOODS

Desks (Nos. 69–75, 140, 373, 758, 792). Approximately 50 parts of cast-iron frames of school desks were found in excavation, particularly at the site of the Hospital, but elsewhere also. Only selected parts, complete in themselves or carrying distinctive designs or lettering, were collected. All had apparently been damaged by the fires that destroyed the buildings. The frames are of two slightly different designs, having open grillwork, and two sizes of desks are represented, as marked in cast letters "C" and "D" (Nos. 74, 69). These desks, of which the frames have been preserved, all appear to have been manufactured by the "Sterling School/Furn. Co./Sterling, Ill.," as appears from the cast letters on several specimens (Nos. 73, 637). Patent dates are legible on one specimen (No. 69) showing that patents were issued on Jan. 21, 1873 [?] and June 5, 1877. Published records show that a patent for school desks was issued to one C. H. Presbrey, Sterling, Ill., on the latter date (U.S. Patent Office, 1877; specifications and illustration). A distinctive feature was a "fluke-shaped" nut, of which specimens are preserved on the frames collected. The Sterling School Furniture Co., of Sterling, Ill., originally known as the Novelty Iron Works Manufacturing Co., was organized as a stock company in 1869, and was renamed in 1873. Charles H. Presbrey was one of the directors, and the "Sterling Seat" was among the various types of school equipment manufactured by the company, and widely sold (Bent, 1877, pp. 431–432).

Inkwells (Nos. 49, 161–164, 298, 370, 371, 568–570). Cast-iron inkwell covers doubtless originally part of the desks mentioned above. These wells were furnished with a small sliding cover bearing the die-stamped lettering: "N I W/ Sterling/Ill." The legend probably stands for "Novelty Iron Works."

Slates (Nos. 43, 80, 81, 191, 223, 309, 419–422). Fragments of school slates, none of which is sufficiently well preserved to indicate the size of original surfaces.

Slate pencils (Nos. 44, 98, 132, 136, 308, 339, 349, 443–447, 554, 577, 912, 1658, 1768). Fragments of school slate pencils (3/16 inch diameter). Though some of the fragments show roughly flat surfaces, most appear to have been machine turned.

Chalk pencils (Nos. 133, 209, 448). Fragments (approximately 5/16 inch diameter).

OTHER CIVILIAN GOODS

Construction materials, building hardware, and fittings:

Adobe bricks (Nos. 381–386, 1091, 1092) (illustrated examples pl. 52, *j, 1*). Accidentally fired adobe bricks. Six specimens (Nos. 381–386) are from the site of the West Wing of the Hospital; two (Nos. 1091, 1092) from the site of the South Barracks. Although it is known that during the manufacture of the adobe bricks at Fort Stevenson, changes were made in their dimensions, those seen were all of the original size as given by de Trobriand (de Trobriand, 1951, p. 335) (11½ inches to 12½ inches in length, 6 inches in width, and 4 inches in thickness). As a result of the accidental firing, they are of a yellowish-red color, similar to the "brick red" of common fired brick. It is known that cut prairie grass was used in molding the adobe bricks, and the specimens show fiber-impressions (e.g., Nos. 384, 385). The bricks were used exclusively with adobe mortar in the masonry, so far as was visible in excavations at the various building sites. One specimen (No. 1092) shows the fired mortar adhering.

De Trobriand's comments on the experiments made in changing the size of adobe brick to that used in the Southwest, and on experience at the post in using adobe bricks for building, are of considerable interest (de Trobriand, 1951, pp. 43, 211, 335; Howell, 1908, p. 400). Southwestern adobe bricks vary in size, but are generally about 18 inches in length, from 8 to 10 inches in width, and from 4 to 6 inches in thickness (Hodge, 1907, vol. 1, p. 14).

Common fired bricks (Nos. 126, 176–179, 387–394, 537, 1093–1098) (illustrated examples pl. 52, *g, h, i, k, m*). Common red, yellow, and gray fired bricks (8 to 8¼ inches in length; 3¾ to 4 inches in width; 2¼ to 2½ inches in thickness). True firebricks, which are more highly fired, and are used for special purposes, were not found at the site. By far the greater number of the bricks found at the site were unmarked, but two marked varieties (die stamped while wet) are as follows: "Evens & Howard/St. Louis, Mo.," (numerous) (No. 388), and "S B" (infrequent) (No. 389). The latter mark may stand for "S[aint Louis] B[rick]," or indicate grade or style of brick. The firm of Evens and Howard was established in 1857 by R. J. Howard and John C. Evens, who had purchased a plant in operation since 1832 at St. Louis. The original plant is said to be still in use, and the company is now known as the Evens and Howard Sewer Pipe Co., 5200 Manchester Ave., St. Louis (information from Superintendent Walter C. Ude, Apr. 17, 1952).

One common fired brick may be of a special type. This brick (No. 126) (pl. 52, *m*), the only one of its kind found in excavation, has a shallow longitudinal channel along one face. Since only one specimen was found, it is possible that this brick may have been accidentally included in those shipped to the post.

Two fragments of fired-brick slabs were found, which may be chimney fittings. The first (No. 178) is stamped with letters and a number (incomplete) (3¼ inches in width, ¾ inch in thickness). The other (No. 179), a channeled slab, has a sloping upper surface (1¼ inches in thickness).

Lime plaster and mortar (Nos. 99, 116–125, 272, 320, 321, 1367, 1490, 1540–1545, 1560–1566, 1625). Specimens of common lime mortar and plaster; one fragment (No. 1624) shows a copious use of hair, in this instance apparently cow hair, perhaps obtained from the hides of beef cattle used at the post. Specimens of plaster from the site of the Command-

Construction materials, building hardware, and fittings—Continued

ing Officer's Quarters show painted surfaces. These are pink on white (No. 1542) and pink on white over pink on white (No. 1560/3); gray green over yellow (No. 1561/2); gray green over white (No. 1563); yellow over gray green (No. 1564); yellow on green on white (No. 1544); green on white (No. 1541); brown on white (No. 1540); and uncolored white. It is impossible to correlate these colors with the wall decorations mentioned by de Trobriand, and it is probable that some of the colors represent subsequent redecorating of the rooms (de Trobriand, 1951 a, p. 340). The lime plaster, like the fired bricks, was doubtless obtained on contract, from St. Louis.

Boards (Nos. 1616, 1625, 1626, 1754). Various specimens of plain and tongue-and-groove wooden boards (some damaged by fire); various dimensions.

Shingle (No. 1629). Fragment; apparently cedar.

Wooden molding (Nos. 1615, 1627, 1628). Various specimens of moldings; clear white pine.

Door (No. 1751). Clear white pine (66 by 28 by 1⅝ inches). Four panels. The door is fastened wholly with wooden dowels.

Door sills (No. 1753/1–2). Cottonwood sills of local manufacture. One is much worn through use.

Window casing (No. 1752). One portion of clear white pine, window casing (No. 1754/17) is of particular interest in view of original markings preserved on it. This was obtained at the site of the Commanding Officer's Quarters, and bears two painted stencils—one the name of the manufacturer of the millwork, the other the address to which the millwork was shipped. The first stencil reads, in part: "The / Market Street Planing Mill / Philibert, Branconier & [Cole ? *illegible*] . . . St. Louis, Mo." It is known from St. Louis city directories that the firm of Benjamin Philibert and David Branconier were in the millwork business there as early as the year 1857. The name of Nelson Cole first appears as a member of the firm in 1866. A successor to the original owners, known as the William C. Frye Manufacturing Company, appeared in these directories as late as 1913 (information from the Missouri Historical Society, St. Louis, Apr. 9, 1952). The second stencil referred to, reads "A[cting]. A[ssistant]. Q[uarter]. M[aster]./Ft. Stevenson / D[akota] T[erritory]." Dakota Territory was established in 1861, and was succeeded by the States of North and South Dakota, admitted in 1889. Since the millwork of which this is a part was shipped to a representative of the Quartermaster Department, and during the military occupation of the post, which ended in 1883, it is probable that this is actually a portion of the original millwork used in the Commanding Officer's Quarters, and belongs to the period of 1867.

Roofing (No. 1416). Fragment; galvanized iron.

Gutter (No. 1629). Fragment; tin with shingle fragment attached.

Glass, window (Nos. 39, 76, 97, 172, 210, 310, 333, 412, 413, 472–474, 551, 935, 1191, 1318, 1470, 1533, 1578, 1745, 1773, 1816, 1844). Numerous lots of fragmentary window glass; specimens are available from each individual site excavated, including both of the latrines. Much of this appears to be the older, thinner window glass (ca. 1/16 inch in thickness). A few specimens are of thicker dimension, possibly of more recent date (e.g., No. 551/78). Much of the glass collected shows evidence of fire damage. Glass not so affected was doubtless shattered, without other damage, at the time of the burning of the buildings.

Construction materials, building hardware, and fittings—Continued

Nails and spikes (Nos. 21–23, 53–57, 92–93, 110, 127–131, 248, 249, 273, 323–326, 353–357, 376, 377, 449–455, 457, 477, 555, 556, 614, 684, 685, 752, 861, 862, 1210–1220, 1233, 1393–1395, 1499, 1550–1553, 1555, 1597, 1622, 1699, 1700, 1755, 1789, 1790, 1792–1795, 1825) (illustrated examples pl. 51, *b–i*). Numerous lots of nails and spikes; specimens are available from each individual site excavated, including both of the latrines. Only two specimens of the entire collection appear to be hand forged, and both of these may have been made and used during the period subsequent to the military post and Indian school. One (No. 1555) is a long spike (7 inches in length). Another (No. 1792) is a small round nail, with rosette head (2½ inches in length; the head ½ inch in diameter). All other specimens are the customary manufactured cut nail, which are still manufactured. Cut nails were obtained, about 1941, by the National Park Service for building restoration at Fort Laramie National Monument.

Screws (Nos. 52, 91, 137, 138, 322, 345, 351, 352, 427, 456, 457, 478, 497, 559, 560, 562, 600, 601, 750, 858, 1201, 1254, 1702, 1796). Wood screws of various sizes.

Door knobs (Nos. 86, 87, 135, 193, 194, 342, 401, 582, 623, 624, 760, 761, 834, 836–838, 986, 1159, 1269, 1270, 1310, 1377, 1457, 1530, 1657, 2054) (illustrated specimen pl. 51, *l*). Glazed earthenware doorknobs (and fragments), some of which retain original steel spindles. Spindles were ordinarily fastened by the use of lead. The earthenware appears to have been of only two types, a mottled brown (e.g., Nos. 624, 1530), and a white (e.g., No. 1657), both highly glazed. No specimens of metal knobs were found, though metal knobs must also have been commercially available at the time the post was in use. In view of the fact that only one complete specimen of the white glaze type was found and this from the site of the Commanding Officer's quarters, it is possible that white knobs were not originally used at the post, and that the specimen found represents a replacement, subsequent to the sale of this building in 1897. A metal door-lock plate (No. 1595), oval in outline and bearing a beaded margin, from the same site, appears also to be a replacement.

Door handles (Nos. 88, 152, 300, 770, 1247, 1637). Metal thumblatch door handles (and fragments).

Door locks (Nos. 151, 284, 372, 433, 573, 612, 657, 728, 731, 787, 874, 919, 1110, 1136, 1238, 1249, 1398, 1496, 1498, 1595, 1862, 1866, 2057). Door locks and latches of various types, and lock parts such as strikers. The majority of these specimens are of rim locks. Although damaged by fire, some specimens show that many of these were black japanned ware, still common in cheaper hardware. One lock (No. 787) (pl. 51, *o*) bears the cast letters: "Patented /May[]1863/June[]1864." This specimen was undoubtedly manufactured under patents issued to Burton Mallory of New Haven, Conn. for a lock and latch and improvement dated May 5, 1863, and June 7, 1864 (U.S. Patent Office, 1866–72 Rep. Comm. of Patents for 1863, vol. 1, p. 402, published 1866; Rep. of Comm. of Patents for 1864, vol. 1, p. 545, published 1866). Another lock, still retaining the spindle for the knob, bears the cast letters, "Patented/June 8, 1880." A patent for a latch was issued to William E. Sparks of New Britain, Conn. on this date (U.S. Patent Office, Official Gazette, vol. 17, No. 23, June 8, 1880). Other specimens (e.g., No. 728) also carry lettering and probably patent dates but because of fire damage are not legible. One lock (No. 284), bearing an arabesque design, has a sliding manual bolt, and probably served as a stop for an interior door.

CONSTRUCTION MATERIALS, BUILDING HARDWARE, AND FITTINGS—Continued

Door springs (Nos. 1583, 1596).

Door roller (No. 439). Probably from a barn door.

Door fittings (Nos. 705, 739, 785, 1698).

Door hooks (Nos. 26, 139, 479, 558, 860).

Latches and hasps (Nos. 24, 25, 141, 153, 598, 602, 756, 1198, 1232, 1503, 2058).

Hinges (Nos. 29, 106, 108, 142, 156–160, 258–264, 288–295, 368, 436, 437, 509, 510, 597, 599, 603–605, 607, 608, 619, 620, 696–699, 704, 727, 730, 733, 735, 740, 746, 827, 864, 869, 911, 920, 922, 1067–1072, 1080, 1156, 1202, 1226, 1399, 1501, 1509, 1546–1548, 1633, 1758, 1863, 1864). Numerous door hinges, of several sizes, and several strap hinges. The latter may be largely of recent farm origin, derived from farm machinery. The door hinges of "butterfly" type are decorated in many instances with an arabesque design, cast or etched into the metal. The use of similar arabesque designs for machine-made objects is well represented in the objects excavated at the site, notably in the lamps and lamp brackets mentioned elsewhere.

Keys and key-plates (Nos. 150, 404, 590, 591, 1400, 2057). Four iron household keys (Nos. 590, 591) found together, three of the four on the original ring (pl. 51, *p*), on the site of the West Wing of the Hospital. The keys have tongues of different patterns, and may have opened special locks about the Hospital. One brass key (No. 404) (pl. 51, *k*) with decorated grip probably fitted a cabinet lock.

Padlocks (Nos. 246, 1203, 1402, 1495, 1889). Specimens of several styles of sheet-steel padlocks (pl. 51, *a*) and one of heavy cast brass. The latter (No. 1203) (pl. 51, *j*), possibly a military issue item, bears the etched lettering: "United States/Lock," with six-pointed stars. This lock was found in excavation along the front wall line of the Commissary Storehouse and may have been a military issue item for use on public stores.

Safe-knob (No. 1227). Knurled safe-knob, with graduations (1½ inches in diameter). Like the padlock mentioned above, this item was found in excavation along the front wall line of the Commissary Storehouse, and may represent a military item.

Window-shade holder (No. 1502).

Shelf bracket (No. 784).

Faucets (No. 1242, 1255, 1554) (pl. 52, *b*). One (No. 1242) of heavy brass (1 inch in diameter).

Pipe fittings (No. 1865/1–2).

Corner plate (Nos. 921, 1248, 1695).

Wall or clothes hooks (Nos. 434, 584, 1221–1223).

Building pin (No. 859).

DOMESTIC FURNISHINGS AND UTENSILS:

Stoves and furnaces (Nos. 68, 240, 242, 244, 252–255, 276, 278–283, 360–362, 465, 466, 483, 485, 491, 495, 611, 613, 641–650, 652–656, 658–672, 702, 706, 855, 991, 1204, 1228, 1229, 1361, 1504, 1603, 1650, 1872). The base of a heating stove of sheet steel, probably suitable for use with the lignite available at the post, was found in the excavation of the site of the West Wing of the Hospital. It was badly damaged by the heat of the fire that destroyed the building and was not preserved. Army type mess-kitchen range (pl. 49, *b*) of sheet steel was found at the site of the Commissary Storehouse, on the surface at the site of the cellar, which had been used as a dump. This range hardly seems suited to farm kitchen needs, and probably had been left at the site when the Indian school was removed. The range may also have been used prior

Domestic furnishings and utensils—Continued

to 1883, at the military post. The range was not collected because of its size. A third, larger stove (pl. 49, *a*), is represented by many fragments of a furnace, of heavy sheet steel, found in excavation at the cellar of the Commissary Storehouse, resting in original position on the floor. These fragments of furnace, much fire damaged, were not collected.

Other stove parts collected (listed above) are fragmentary. Many may pertain to more recent use of the site of the post. One fragment (No. 278) bears the letters "Patented 1875," but is too small to identify it with any of the stove designs patented during the year 1875. A stovepipe damper (No. 1504) carries the cast letters "The Adams Company/ Diamond."

Stove equipment (Nos. 635, 717, 871). A long-handled small coal shovel (No. 635), suitable for use with a heating stove having a small door, was excavated at the site of the West Wing of the Hospital. Two lid lifters (Nos. 717, 871) were also found. The latter bear illegible lettering and "No. 382."

Chairs (Nos. 1611, 1690, 1691, 1732). Fragments of chair rungs, of turned wood, obtained at the site of the Commanding Officer's Quarters. Though some of the fragments may be of some age, nothing of the design of the chairs could be learned from the fragments obtained.

Cabinets. Hardware from various types of cabinets is represented in the collections. Among these are locks and latches, some with arabesque designs (Nos. 265, 266, 745, 842, 850, 863, 872, 918, 1139, 1225, 2056) (illustrated example pl. 51, *n*); casters of white earthenware and metal (Nos. 1252, 1422, 1423, 1601); and knobs for cabinet doors or drawers (Nos. 950, 951, 2053).

Stands (Nos. 786, 923). Parts of two twisted-wire objects, perhaps stands for picture frames.

Lamps (Nos. 50, 51, 61, 63, 155, 180, 239, 269, 277, 285–287, 358, 359, 369, 374, 435, 481, 482, 492, 502, 576, 754, 767, 768, 771, 828, 1058–1060, 1102, 1107, 1240, 1415, 1505, 1719). Numerous cast-iron lamp baskets and brackets (and fragments) for holding kerosene lamps of glass, encountered especially on the sites of buildings that were destroyed by fire. These baskets and brackets (e. g., Nos. 435, 481, 502, 754) appear to be of very similar design (though damaged), and carry arabesque designs or openwork.

One lamp chimney (No. 1102), a large portion of which was preserved, is a cylindrical tube, apparently of more heat-resistant glass, of the Argand style (1¼ inches in diameter at the upper end; 1⅞ inches in diameter at the lower end; incomplete). In this lamp, which was for use with kerosene and other fuels, a tubular wick permitted a circular flame. The special chimney increased the brilliance of the flame (Hough, 1928, pp. 71–72 and pl. 66, *a*). Other fragments (e.g., No. 1107) are derived from the more common bulbous variety of lamp chimney.

One brass wick mantle part (No. 1415) is die stamped "Steel Mantle, Toledo Ohio" (2¼ inches in diameter). Another similar mantle (No. 180) bears die stamped on the wick-roller knob, the legend: "Pat. Jan. 16, 83 & Feb. 11, 73 [sic]." A patent record of the earlier date has not been found, but a record of the later date shows that a patent was issued on January 16, 1883, to Thomas Burns, Brooklyn, N.Y., for an extinguisher for lamp burners (U.S. Patent Office Official Gazette, Jan. 16, 1883, vol. 23, p. 211). An earlier patent, for a lamp, had been issued February 11, 1873, to Lewis J. Atwood, Waterbury, Conn., assigned to the Plume and Atwood

DOMESTIC FURNISHINGS AND UTENSILS—Continued

Manufacturing Co., of the same place, and the two patents are doubtless those referred to on this specimen (U.S. Patent Office Official Gazette, Feb. 11, 1873, vol. 3, p. 166).

Candleholder (No. 1871) (pl. 53, *h*). A small brass candlestick (without grip), of rolled sheet metal (2½ inches in height, the base 3½ inches in diameter). Surface find, but probably of some age.

Clocks (Nos. 507, 1427, 1582). Fragments of the works of three clocks. One set of works (No. 507) fire damaged, from the site of the West Wing of the Hospital, is of brass and apparently of the alarm-clock type. These works bear a die-stamped legend: "S Thomas/Thomaston, Ct./U.S.A.," a monogram of the letters S and T in a lozenge, and the numerals "9½" (presumably referring to the size of the clock). The famous Seth Thomas clock factory, originally established at Plymouth, Conn., was continued after the founder's death in 1859; about this time the community was made into a separate town, and named Thomaston in his honor (Mitman, 1936).

Chamber pots (Nos. 1830, 2041–2043). Fragments of heavy white earthenware (Nos. 2041–2043) from two or more broken vessels. All were found at the site of the South Barracks. Galvanized metal cover (No. 1830), with decorated knob, probably for chamber pot.

Trunk (No. 1206). The lock of a small trunk or chest, of brass.

Vase (No. 1450). Miniature molded bisque vase or pitcher (damaged), bearing an arabesque design (ca. 3 inches in height) (pl. 53, *f*).

Figurines (Nos. 527, 1456, 1737). A molded earthenware figurine (No. 1737) (pl. 53, *g*), the figure being that of a tortoise-shell cat (2½ inches in height). The cat is seated on its haunches, the forelegs straight, the head turned to the right, and the tail curled up on the right side. The body is painted gray to simulate the markings of a tortoise-shell cat, the nose and mouth are outlined in pink. A ribbon around the neck tied in a bow at the front is gilded. The whole piece is highly glazed.

A fragment of molded earthenware figurine (badly damaged) of a seated woman (No. 1456), has the skirt outlined in blue and red bands, and decorated with red spots. The seat against which the figure reclines is outlined in green, and the whole piece has a low glaze.

Another item (No. 527) listed as a figurine (ca. 3 inches in height) may also be the cover of a small jar for a dressing table. This item bears the figure of a woman leaning against a fence or gate, and is probably intended to represent "Mistress Mary" of the nursery rhyme. Her skirt is a bright blue, the background pink. A white and gray cat plays with a ball in front, and the figures are encircled by a row of objects probably intended for cockleshells.

Pin tray (No. 1137). Of pewterlike metal.

Inkwell (No. 1849) (pl. 53, *j*). Molded blue-green glass inkwell, hemispherical in shape, and provided with an opening or neck at the side. (Opening ½ inch diameter.) The bottle bears the molded lettering "J. J. Butler, Cin[cinnati], O[hio]," around the side. James J. Butler, a prominent ink manufacturer of Cincinnati, is listed as a druggist there as early as 1844. By 1850 he was listed as agent for ink and in 1867 as having a factory. He died in 1874 (information from Historical and Philosophical Society of Cincinnati, Apr. 29, 1952). This bottle was found in excavating the earlier of the two latrines (No. 2) adjacent to the Hospital site, and is undoubtedly derived from the military period.

Knives, table (Nos. 143, 458, 615, 720, 722, 778, 783, 795, 805–807, 810, 814, 818, 820, 823, 824, 845, 847, 848, 851, 854, 992–1016, 1057, 1062, 1063, 1065,

DOMESTIC FURNISHINGS AND UTENSILS—Continued

1099, 1100, 1111, 1112, 1144, 1147, 1148, 1152, 1194, 1231, 1250, 1273, 1387, 1388, 1592, 1594, 1809, 1870). Table knives of steel or silver plate (pls. 50, *o*, 53, *a*). One style (e.g., Nos. 994, 1870) appears to be a true mess knife, with a plain recessed handle. Two knife blades (Nos. 998, 1144) appear to be from carving knives. A small knife (No. 1112) (pl. 53, *c*) of the fruit-knife class bears a stamped or etched arabesque design on the handle. This knife is of brass and bears a different design on each side of the handle.

Forks, table (Nos. 713, 721, 779, 781, 797, 799, 803, 804, 808, 809, 811–813, 816, 817, 819, 825, 853, 915–917, 1017–1036, 1064, 1101, 1114, 1592, 1710). Table forks of steel and silver plate. The former (e.g., Nos. 1034, 1036) (pl. 50, *r*, *s*) appear to be exclusively three tined, having originally had wood or bone handles, or a recessed handle—probably an issue mess fork. The silver-plate specimens have no separate fittings.

Spoons (Nos. 31, 144, 327, 723, 777, 780, 794, 796, 798, 800–802, 815, 821, 822, 831, 833, 835, 843, 844, 846, 849, 852, 875–886, 887, 914, 925, 1037–1054, 1061, 1141–1143, 1145, 1146, 1389–1392, 1518–1520, 1557, 1591, 1711, 1724, 1828). Teaspoons and tablespoons of iron and silver (pl. 50, *q*). One teaspoon (No. 800) bears an arabesque design on the handle. One spoon (No. 1061) is a large mixing spoon. One serving spoon (No. 1389), of silver plate, bearing a beaded design on the handle, on the reverve carried the die-stamped letters: "Extra Coin Silver Plate." Another (No. 1145) (pl. 53, *b*) engraved with the letter "W" in Gothic bears on the reverse the die-stamped legend "Rogers & Son ← Greenfield, Mass." No firm at this location is known, nor any other Greenfield firm manufacturing sterling or silver-plated ware at the period in question. It is possible that the piece was manufactured elsewhere, the place name then being added by a Greenfield jeweler, as was sometimes done. (Information from Mrs. Hester C. McKeage, Greenfield Public Library, Greenfield, Mass., June 30, 1954). One teaspoon (No. 852) (pl. 53, *d*) of German silver bears several unidentified hallmarks die stamped on the reverse. Another teaspoon (No. 794) is die stamped on the reverse: "Wm. Rogers Sold in/German silver."

Fork, basting (Nos. 718, 1113). Two-tine steel basting forks with wooden handle fittings.

Cups, metal (Nos. 881–883).

Mess plate, metal (Nos. 686–695, 1085–1090). One group (No. 1085) damaged by fire is rusted together (9 inches in diameter).

Meat saw (Nos. 751, 962).

Butcher's steel (No. 715). Lacks handle; for sharpening kitchen knives.

Kitchen vise (Nos. 790, 870). With screw clamp.

Kettles (Nos. 716, 1076, 1138). Fragments of metal kettles.

Skillet (Nos. 734, 1079). Sheet iron.

Griddle (Nos. 1074, 1078). Cast iron.

Muffin pan (No. 1073) (pl. 53, *n*). Cast iron.

Food mill (No. 1084). Fragment of top, probably from sausage mill.

Coffee mill (No. 1418). Fragment of top, with part of handle.

Egg beater (No. 1424).

Funnel (No. 1656).

Bottle opener (No. 1196).

Jar lids (Nos. 1329, 1385, 1762).

DOMESTIC FURNISHINGS AND UTENSILS—Continued

Scouring brick (Nos. 1586, 1769) (pl. 52, *e, f*). Fragments of fire brick used about kitchens.

Menu holder (No. 617). Metal holder probably for menu card (4¾ inches in height; 3¼ inches in width).

Matchbox (No. 484). Fragment of matchbox of cast iron with corrugated striking surface.

Matches (Nos. 1838, 1839). Fragment of pocket matchbox (No. 1839). A metal cylinder, with wooden match sticks adhering. A group of matches identical with the others (No. 1838) (2½ inches in length; ³⁄₁₆ inch by ³⁄₁₆ inch). The sticks appear to be clear white pine, and show only faint traces of chemical treatment.

Clothespin (No. 1687). Wooden.

Pail and tub handles (Nos. 610, 744, 793, 1257–1259, 1696).

Wringer fitting (No. 1241).

Mopheads and clamp (Nos. 503, 708, 724).

Clamp (Nos. 743, 1256).

Spring scale (No. 1632).

Candy tongs (No. 1575).

"*China*" (*White Earthenware*). Numerous specimens and fragments, generally fire damaged. Nearly all are undecorated.

Platters (Nos. 1902, 1924–1928).

Vegetable dishes (Nos. 1898, 1899, 1975–2000). Two different styles, the only difference being in the thickness and weight of the pieces.

Bowls (Nos. 1265, 1964–1966). Medium large and heavy (4 inches in height; 4¼ inches in diameter). One bears a transfer mark of the British coat of arms and the words "Royal Ironstone/China/Anchor Pottery." Although it would appear that this piece was of British manufacture, there was an Anchor Pottery at Trenton, N.J., and there was at one time much imitation of British china and earthenware by American firms.

Dinner plates (Nos. 1369, 1900, 1906–1923).

Soup plate (No. 1901).

Gravy boat (No. 1967).

Cups (Nos. 1289–1294, 1368, 1894, 1933–1957). Several were made without handles.

Saucers (Nos. 1896, 1897). Two different styles, the only difference being in the shape of the rim portion; one group is straight rimmed, the other curved.

Sauce dishes (Nos. 1958–1960).

Pitchers (Nos. 1895, 1961–1963).

Butter pats (Nos. 942–945, 1929–1932) (illustrated example pl. 53, *i*). Seven white earthenware butter pats, square in outline, bearing a transfer design in brown of a harebell. This transfer had also been hand painted in blue, on the blossom.

Cover knobs (Nos. 418, 949, 1082).

Wash basin (No. 2134) (pl. 52, *a*). Plain lip (4½ inches in height; 14¾ inches in diameter). Bears the transfer mark of the firm of Burgess and Campbell. This firm, of Trenton, N.J., was established in 1879.

Unidentified shapes (Nos. 35, 36, 42, 175, 192, 222, 319, 337, 338, 415–417, 528–535, 762, 1162, 1168, 1266, 1267, 1296–1305, 1330, 1333–1339, 1370–1374, 1430–1449, 1451, 1452, 1454, 1567–1570, 1670–1672, 1694, 1736, 1739, 1779, 1781, 1782, 1814, 1880, 1903, 1904, 1968–1974, 2001–

DOMESTIC FURNISHINGS AND UTENSILS—Continued

2040). Sherds of small size or lacking distinctive features. The great bulk are obviously derived from dinner plates, saucers, and the like.

Stoneware (colored earthenware):

Jugs and jars (Nos. 1160, 1163, 1192, 1243, 1268, 1275–1279, 1308, 1376, 1905, 2046–2049) (illustrated example pl. 52, *d*). Large food-storage crocks.

Churn cover. (No. 1167). Fragment.

"Bitters" bottle (No. 1268/1–4). Die-stamped "P. & J. Arnold, London."

Glass dishes and plates (Nos. 524, 594, 764, 913, 1183/1, 1184–1187, 1260, 1316, 1317, 1321, 1351, 1379, 1380, 1461–1463, 1746/19). Numerous fragments and small groups of fragments. One group (No. 764) is derived from a green-glass molded dish with an irridescent "gold"-painted surface. This is similar to the "premiums" given away by merchants, and probably represents objects of the farm period at this site. Another fragment (No. (1463) is from a pressed "hobnail" plate, carrying letters about the rim. Two letters, ". . . B R . . ." show on the fragment, which may be from a calendar plate (February). Imitation cutglass (actually pressed glass) is represented (Nos. 1185, 1186). Several fragments of glass (No. 913), damaged by heat, are derived from a small ribbed blue-glass dish or container. Most of these glass fragments are probably from the last period of occupation of the site.

Goblets and tumblers (Nos. 316, 765, 938, 1104, 1105, 1183/2, 1188, 1260–63, 1322, 1326, 1350, 1352, 1679, 1817, 2050). Various fragments of clear glass. One goblet (No. 765) is of imitation cutglass. A portion of a whiskey glass (No. 1188) of 2-ounce size, is damaged by heat.

Cruet (No. 1743). Clear glass stopper from cruet or castor set of molded glass.

Glass bottles (Cf. also Military goods—Medical):

Liquor, wine, and beer bottles (Nos. 190, 941, 1083, 1170, 1466, 1746/23, 1845/18, 1851, 1879/11). A fragment of the base of a pint whiskey flask (No. 1845/18), of clear bluish glass, is of a type familiar to glass specialists. This bears a spread eagle with olive branch and arrows, and "Pittsburgh/Pa." molded in an oval panel on one face; the other face is lacking (McKearin, 1941, pp. 537–542). A similar specimen was excavated at the site of Fort Ridgely, Minn. A fragment of the base of another clear-glass quart whiskey flask (No. 941) bears, in molded letters in a depression on the base, "W. McC. & [ ]." This probably stands for William McCully and Co., Pittsburgh glass makers at least as early as 1832 (McKearin, 1941, pp. 594, 600). Other McCully pieces have been excavated at Forts Laramie and Ridgely.

A few wine-bottle fragments were obtained, in dark-brown or dark -green glass (Nos. 190, 1746/23, 1879/11).

Two brown-glass quart beer bottles (Nos. 1083, 1851) appear to be somewhat more recent glass types. The first of these bears the molded letters on the base: "D. S. G. Co./18." Still more recent beer bottles (No. 1170) are represented by a fragment lettered "Golden Grain Belt Beers." This firm, of Minneapolis, Minn., still uses similar bottles.

Condiment bottles (Nos. 927, 1580). Clear molded glass stoppers of condiment bottles, marked with the name "Lea & Perrins," a New York firm that has been in business for more than a century.

DOMESTIC FURNISHINGS AND UTENSILS—Continued

Flavoring extract bottles (Nos. 526, 1744, 1850). Fragments of three small-mouth, clear-glass, flat extract bottles. One (No. 526) (pl. 53, *k*) originally holding 1½ ounces, has molded on the two sides the name "Burnett" and "Boston." The well-known firm of Joseph Burnett and Co. was established at Boston in 1854 (Kasten, 1929). A very similar bottle (No. 1850) of 2-ounce size is unmarked.

Infants' food bottles (No. 1660) (pl. 53, *e*). Three soft white rubber stoppers for "Mellin's Food containers," another old Boston product.

Corks (Nos. 94, 134, 1617, 1688/1–6, 1731). Numerous specimens of natural corks, most of which are wine-bottle size (ca. ¾ inch in diameter). One cork (1688/5) of larger dimension is probably the stopper of a condiment or pickle bottle (1¼ inches in diameter).

TOOLS AND IMPLEMENTS:

Shovels (Nos. 146–148). Metal parts only.

Tack hammer (No. 753). Steel head only.

Tinner's hammer (No. 585) (pl. 51, *m*). Steel head only.

Axes (Nos. 1826, 1868) (pl. 52, *c*). Steel heads only; both are from single-bit axes.

Hatchets (Nos. 165, 732, 1869). Steel heads only.

Whetstone (No. 1884).

Chisel (No. 431).

Files (Nos. 328, 461, 1081, 1131, 1132, 1404, 1536, 1547, 1652, 1653). Most are flat files (e.g., No. 328). Two (Nos. 461, 1081) are triangular.

Drill bit (No. 788). 1 inch diameter.

Screw driver (No. 1605).

Flat wrench (No. 1157).

Saw (No. 751). Clamp for holding saw blade.

Bucksaw (No. 1607).

Level (No. 1537). Wooden and metal fragment with hand grip—perhaps the handle of a rough level or plasterer's trowel.

Scythe (No. 1759). Tightener for scythe handle.

Hoe (No. 1158) (pl. 54, *c*). Steel head only.

Pulley (No. 1705).

Scissors (Cf. also Military goods—Medical) (Nos. 791, 1516).

HARNESS AND FARRIERY:

Ox shoe (No. 1707) (pl. 54, *h*).

Horse and mule shoes (Nos. 66, 508, 729, 1066, 1638, 1873).

Neckyoke (No. 504).

Ring and strap (No. 1493).

Buckles (Nos. 1513–1515, 1642).

Harness ornament (No. 749).

Sleigh bell (Nos. 1282, 1344) (pl. 54, *o*). Cast bronze (3½ inches in height). These two fragments (which complete the bell) were found separately at the sites of the Commissary Storehouse and South Officers' Quarters and are probably of farm rather than earlier origin.

AGRICULTURAL OBJECTS:

Barbed wire (No. 1135) (pl. 54, *b*).

Fence wire (No. 1801).

Fence staples (Nos. 67, 1396, 1494, 1599, 1631, 1697).

Counter balance (No. 726). Steel weight, probably from safety valve of a piece of farm machinery.

Windmill shaft (No. 1614). Fragment.

CLOTHING AND FOOTWEAR:

Fabrics (Nos. 1686, 1785, 1797, 1820, 1828). Bits of fabric—wool, cotton, and the like. Some are knit fabrics, probably stocking material.

Buttons (Cf. Military goods—Uniform and insignia, above) (Nos. 102, 307, 341, 593, 748, 776, 952–955, 1130, 1209, 1271, 1345, 1477, 1529, 1573, 1574, 1647, 1682, 1729, 1766, 1819, 1929). Numerous buttons of milk glass, mother-of-pearl, bone, and hard rubber, ranging in size from ¼ inch to ⅝ inch diameter. Most of these are 2- or 4-holed. One (No. 1574), of milk glass, is 3-holed. One 2-part metal button for work clothes (¾ inch in diameter) bears a die-stamped design showing a locomotive with three drivers and a tender on rails—a style familiar to button collectors.

Suspender buckles (Nos. 424, 1767). Die-stamped brass buckle: "437/S & G.M. Co. / Pat. March 7, 1871." The buckle may be derived from a truss, for which a patent was issued on this date to Adam Hinoult, Montgomery, N.Y. (U.S. Patent Office Ann. Rep. Comm. of Patents 1871, published 1872, vol. 1, p. 158, March 7, 1871).

Suspender fastener (No. 1428). Stamped metal fastener, bearing patent date: "Pat. Dec. 4, 1900" (patent record not found).

Belt fastener (Nos. 1426/1–2, 1708, 1770).

Corset stays (Nos. 1149–1151). Steel.

Shoes (Nos. 775, 830, 971–973, 1386, 1489, 1663, 1664, 1693, 1787). Men's and boys' shoes, some in pairs. All are square toed. Some have original lacings and eyelets. Some were found in excavation of the later of the two latrines (Latrine No. 1).

Hats (No. 1785). Fragments of black felt hats, apparently of boys' sizes, and perhaps issue items of the Indian school period, found in excavation of the later of the two latrines (Latrine No. 1).

PERSONAL POSSESSIONS:

Tobacco pipes (Nos. 196, 197, 340, 640, 1103, 1487, 1678, 1836–1838, 1859, 1888). Several of the specimens are fragments of bowls and stems of white clay trade pipes. The bowl of one pipe (Nos. 197, 1888) (pl. 54, *k*) is decorated with rows of stars in relief. Another (No. 1836) is one variety of a well-known style, bearing the letters "T D" on the side of the bowl toward the stem, encircled by 13 6-pointed stars. Another row of 13 stars of this kind encircles the rim of the bowl, and a floral design follows the mold joint from rim to heel, opposite the stem. Similar styles of "T D" clay pipes have been excavated at the sites of Forts Laramie and Ridgely. The use of 13 stars on this specimen suggests that the piece is of American manufacture, but similar pieces are known which are of European manufacture. A "T D" pipe found at Fort Ridgely, Minn., was manufactured by A. Coghill, of Glasgow, Scotland. The initials "T.D.," commonly found on clay pipes of the 19th century, are thought by many to be derived in some fashion from the name of "Lord" Timothy Dexter, the famous eccentric merchant of Newburyport, Mass. (1747–1806) (Mathews, 1951, vol. 2, p. 1697; Fuess, 1930, vol. 5, pp. 281–282 and references therein). There seems, however, to be no mention of his connection with the manufacture of, or trade in, clay pipes, and the specimens of European manufacture similarly marked suggest that this identification of "T. D." is in error.

Another clay pipe bowl (No. 640) (pl. 54, *i*) obtained is of distinctive pattern bearing on one side of the bowl, between the mold joints, the British crown encircled by a wreath. On the other side of the bowl (pl. 54, *l*) is the crest of the Prince of Wales (three plumes), also encircled by a wreath. This pipe may belong in the commemorative class. Edward,

PERSONAL POSSESSIONS—Continued

Prince of Wales (Edward VII of England) who was born 1841, visited the United States in 1860 and was cordially received. The pipe may have been designed at this period. The Prince's recovery from typhoid fever, in 1871, was also the occasion for special observances throughout the British Empire. Other commemorative clay pipes of 19th-century manufacture are known (Lincoln, Grant, and others). Another interesting bowl fragment (No. 1103) of white glazed earthenware, a rarer type than the unglazed clays, bears a floral design in relief on the heel. This style of glazed pipe may be of Continental rather than British origin—perhaps specifically Dutch or German. Two similar glazed pipes were excavated at Fort Ridgely, Minn.

Two pipe bowls from this site (Nos. 1487, 1837/1) (pl. 54, *j*) are of brier. The latter of these was found in association with a curved hard-rubber stem (No. 1837/1–2) (pl. 54, *q*) showing toothmarks on the bit.

Tobacco label (No. 957). Small metal tag bearing letters "Lorillard-Climax Plug." The well-known Lorillard Company, of New York, first marketed this brand of plug tobacco in 1875.

Snuff jar (No. 946) (pl. 53, *m*). White glazed earthenware jar with narrow mouth, 3 inches in height (lacks stopper), probably for snuff.

Lockets (Nos. 1524, 1772, 1861). A nickel-plated locket face (No. 1524), 1⅝ inches in diameter, is of special interest in representing the only literally personal item found in excavations at this site. This locket face bears, in hand-engraved script, the name "Robert Benzinger / Co. G. 7th Infty." Companies of the 7th Regiment were on duty at Fort Stevenson from 1880 to 1883 (Mattison, 1951, p. 24). A round glass disk (No. 1772) with ground edges appears to be from a locket (¾ inch in diameter).

Pocket watches (Nos. 1140, 1155, 1483/1–5, 1725, 1835). A group of watch-parts (No. 1483/1–5) probably from the same watch, bear the die-stamped legends "Trenton Watch Co. / Patented" and the number "85186," and "Elgin Nat'l Watch Co." and the number "62298." The numbers probably refer to watch parts. A division of labor between affiliated watch companies is a feature of the business history of this industry, as illustrated here. The Elgin National Watch Company, incorporated in Illinois in 1865, adopted this form of the name in 1874. One watch complete with silver case (No. 1835) (pl. 54, *n*) was found in excavation of the earlier latrine (Latrine No. 2). Though badly corroded, this piece appears to be intact.

Watch chain (No. 1765). Twisted brass links, a portion of a watch chain. The links are ¼ inch in width.

Pocket knives. (Nos. 967, 1195, 1251, 2055) (illustrated example pl. 54, *p*). Various styles (some specimens fragmentary) with bone or wood inlays.

Wallet (No. 1821). Leather wallet with leather lacings apparently handmade (3¾ inches by 5 inches).

Purse (No. 774). Metal clasp of small coin purse.

Coins (Nos. 636, 1117, 1572). A silver U.S. dime (No. 636) (pl. 54, *e*) minted 1877, figure of seated Liberty. A nickel 5-cent piece (No. 1117) (pl. 54, *g*), minted 1866, design of shield with rays. A bronze 1-cent piece (No. 1572) (pl. 54, *f*), minted 1889, figure of Indian head. The dime and nickel have been damaged by fires, and appear to have been lost at the site during the military period.

Savings bank (No. 1357). Nickel-plated brass bank (one leaf only), die-stamped "Oakland / Savings / Bank / 1028 / Oakland, / Iowa . . ." The

PERSONAL POSSESSIONS—Continued

numeral doubtless gives the account number. The object is probably very recent in origin.

Spectacles (Nos. 587, 932). Glass lenses with ground edges, oval in outline. The first specimen is 1⅜ inches in width, 1 inch in height; the second, 1³⁄₁₆ inches in width, ⅞ inch in height.

Political badge (No. 1286). Brass badge, shield shaped and pierced for suspension (1¾ inches in height). Die stamped on the obverse is the lettering: "National / Republican Convention / Minneapolis / 1892"; on the reverse: "Schwaab / Stamp & Seal Co. / Milwaukee." The shield has a circular opening at the center originally holding a celluloid portrait of the candidate. The nominee at this convention was Benjamin Harrison. Specimens of similar political badges are well known to collectors.

Buttonhook (No. 1429).

Shoe dauber (No. 1733).

Mirror (Nos. 329, 330, 1846). One fragment (No. 1846) is of a small pocket-size mirror. Other fragments are too small to estimate original size.

Combs (Nos. 306, 402, 1115, 1365, 1571, 1740, 1887). A portion of one hard-rubber comb (No. 306) is reinforced with a brass backing. This bears the die-stamped legend, on the two faces of the brass: "E. M. Noyes. Pat. June 7, 1864" and "E. M. Noyes. Pat. Apr. 14, 1868." Patent records show that patents for toilet combs were issued on these dates to Elfameo M. Noyes, Newark, N.J. and Joseph P. Noyes, Binghamton, N.Y., respectively (U.S. Patent Office, Rep. Comm. of Patents for 1864, vol. 1, p. 545, published 1866; Rep. Comm. of Patents for 1868, vol. 1, p. 807, published 1869). A hard-rubber comb (No. 402) (pl. 54, *d*) provided with fine teeth on either edge, in the style long used for children's combs, is stamped with the legend: "I. R. Comb Co. Goodyear/Patent May 6, 1851." (3¼ inches in length; 1⅝ inches in width.) A fragment of another comb of hard rubber is stamped "Hercules. Warranted unbreakable. No. 1024" and on the reverse "Goodyear 1851." The famous Nelson Goodyear patents for hard rubber were probably widely infringed upon by manufacturers and the present specimens are, of course, of later manufacture than the year 1851.

Toothbrush (No. 1741). Fragment of bone handle of brush, the part originally carrying the bristles, which were set in three rows.

Perfume bottle (No. 1843). Clear glass bottle, oval in cross section, containing approximately 6 ounces, bearing on one face the molded lettering: "J. Hauel/Philadelphia." A similar specimen was excavated at the site of Fort Ridgely, Minn. One Jules Hauel, perfumer, is listed in Philadelphia directories from 1840 to 1866 (information from Historical Society of Pennsylvania, Apr. 4, 1952).

Ice skates (Nos. 1134, 1512) (illustrated example pl. 54, *a*). Solid steel runners of shoe skates. One (No. 1512) is die stamped on the side: "Halifax Pat./Club Skate."

Harmonicas (Nos. 548, 1153, 1154). Fragments of specimens. One (No. 1154) is the brass plate originally holding the reeds.

Dominoes (Nos. 627–631, 840, 1364) (illustrated examples pl. 54, *m*). Ivory and ebony dominoes, the parts fastened with brass pins. All but one are of a single size, and apparently belong to one set (1¾ inches by ⅞ inch by ⁵⁄₁₆ inch). This group is engraved with shallow black-painted dots (¼ inch in diameter). Of the group, one domino is "double six," one "six four," one "six naught." The single specimen (No. 1364) of

PERSONAL POSSESSIONS—Continued

smaller size, a "six five," has slightly smaller dots (1⅝ inches by ¾ inch by 5/16 inch).

Toys:

Animal (No. 1712). Cast-iron figure of horse.

Dolls (Nos. 588, 589, 1340/1–2, 1455, 1458, 1675/1–2, 1676, 1818). Fragments of two high-glaze painted "porcelain" doll heads. One (No. 1455) has the skin surface painted in pink. The other (Nos. 1458 and 1675/1–2), the surface of which is white and undecorated, has hair, eyebrows, and eyelashes in black, the eyes blue and black and outlined in red. Two molded white earthenware legs of small jointed dolls (Nos. 588, 589) bear impressed numbers "V" and "VI," perhaps size or part numbers.

Dishes (Nos. 1673, 1674, 1735). Two miniature molded white earthenware cups (Nos. 1673, 1735), (⅝ inch in height). One miniature molded white earthenware cover for dish, lacking knob, oval in outline (1½ inches by 2¼ inches).

Trivet (No. 1602). Cast-iron openwork stand for holding toy sad-iron, arabesque design.

"*Spider*" (No. 1645). Miniature cast-iron handled pan, round bottomed.

Wheeled toys (Nos. 1559, 1644, 1690/5, 1713). Two fragments (Nos. 1644 and 1713), of cast iron, from toy railroad coaches. One fragment of wooden wheel (No. 1690/5) is a solid hub, with holes to receive the spokes (1¼ inches in diameter).

Marbles (Nos. 1677, 1719). One (No. 1677) is of the "agate" variety.

Blocks (Nos. 1727, 1728). Children's wooden alphabet blocks. One (No. 1727) is painted red, with the letter "T" stenciled in black paint (1¾ inches by 1¾ inches by ¼ inch). The other (No. 1728) is a cube with engraved and painted letters. One face bears the letter "D" in red with "E" in blue on the opposite face. The other faces are painted red but carry no letters.

Sewing thimble (No. 1630). Steel (9/16 inch interior diameter).

Thread spool (No. 1689). Wooden.

Safety pins (No. 1480).

Beads (Nos. 1472, 1577, 1646, 1714, 1860). Two blue glass beads (Nos. 1472, 1860/1) are apparently from personal possessions of women of the post, being larger (½ inch diameter) than those ordinarily available in Indian trade. Two other similar beads (Nos. 1646, 1714) are of white milk glass (5/16 inch diameter. Another (No. 1577) is of blue milk glass (¼ inch diameter).

Animal trap (Nos. 789, 1706/2). Steel trap parts. One (No. 789) is of the "Victor" style, size "0", sometimes referred to as the "Oneida trap."

Shotgun shells (Nos. 772, 1129, 1272, 1355/1–3, 1476/1–3, 1610, 1662, 1764). Numerous specimens of 10- and 12-gage shells, the largest number of which are of recent origin (see Appendix).

UNCLASSIFIED:

Bolts, metal (Nos. 58, 59, 367, 428–430, 459, 496, 498, 500, 559–561, 583, 596, 609, 857, 867, 1239, 1397, 1405–1407, 1500, 1600, 1756).

Brackets, metal (Nos. 154, 257, 268, 296, 301, 366, 567, 738, 754, 755, 757, 759, 990, 1522).

Buckles, metal (Nos. 1734, 1761).

Jet burner, metal (No. 505).

Chains (Nos. 1491, 1492).

UNCLASSIFIED—Continued

Clamps (Nos. 743, 865, 868).

Containers (No. 1485). Portion of a cylindrical hard-rubber container, mold lettered on the end: "N. R. Co./Goodyear's Pat. May 6, 1851" (¾ inch in diameter; more than 14½ inches in length). Perhaps the container for a farm thermometer or other veterinary equipment.

Corner plate (No. 438).

Cotterpin (No. 683).

Covers and lids, metal (Nos. 27, 28, 149, 769, 964, 1235, 1830); glass (Nos. 1179, 1180, 1319, 1347, 1381).

Fastener, threaded (No. 737).

Fitting, threaded (No. 856).

Grillwork, lead (No. 989). From lamp bracket (?). Floral design.

Handles, metal (Nos. 89, 746, 1077, 1634, 1806).

Hooks (Nos. 479, 1197, 1511, 1704, 1760, 1827).

Rings, metal (Nos. 299, 571, 572, 1635).

Rods or pins, metal (Nos. 432, 460, 462, 557, 558, 707, 736, 1199, 1200, 1555, 1598, 1639, 1641, 1701, 1703, 1791, 1867).

Springs, metal (Nos. 606, 926, 1205, 1224, 1654).

Tubing, glass (Nos. 513, 578).

Turnbuckle (No. 442).

Valve, screw (No. 866).

Washers (Nos. 103, 375, 1508).

Wire (Nos. 423, 425, 712, 773, 786, 958, 1723, 1807). One object of wire (No. 958) is formed in a rosette, the purpose of which is not known.

MISCELLANEOUS

CLINKER (No. 1802).

METAL, MISCELLANEOUS:

Iron and steel (Nos. 47, 48, 101, 104, 236–238, 241–243, 245, 246, 256, 277, 331, 346–348, 350, 363–365, 377–380, 403, 441, 480, 506, 616, 709, 711, 714, 725, 741, 751, 826, 832, 924, 969, 970, 1230, 1253, 1331, 1401, 1403, 1408–1412, 1414, 1420, 1507, 1510, 1556, 1623, 1636, 1643, 1709, 1722, 1757, 1800, 1826).

Tin (Nos. 100, 107, 145, 228–232, 234, 235, 463, 464, 574, 617, 673–682, 888–910, 1208, 1383, 1384, 1506, 1584, 1649, 1651, 1717, 1799, 1805, 1810).

REFUSE BONE (Nos. 37, 166–171, 200–208, 302–305, 332, 395–397, 511, 974–984, 1116, 1332, 1531, 1532, 1587–1590, 1667–1669, 1683, 1747–1750, 1783, 1784, 1803, 1812, 1813, 1832). Refuse bone obtained from the site may be divided into two groups. The first is composed of the remains of domesticated animals including beef, hog, duck, and goose—all doubtless food refuse—and domestic cat. The second is composed of native species, many of which doubtless are also food refuse. These include bison, deer, antelope, white-tail jackrabbit, cottontail rabbit, skunk, raccoon, muskrat, Canada goose, great blue heron, sage grouse, prairie chicken, crow, and egret. The duck and goose bones listed in the first group are of unidentified species, probably domestic but also possibly native. Identifications of all bird bones were made by Dr. Herbert Friedmann of the U.S. National Museum, Washington, D.C. Identifications of all other bones were made by Dr. Theodore E. White, formerly of the River Basin Surveys staff in Lincoln, Nebr.

SEEDS (Nos. 1659, 1715).

SHELLS, MUSSEL (Nos. 1473, 1684, 1777, 1778).

SHELLS, NUT (Nos. 1608, 1659).

STONE, MISCELLANEOUS (Nos. 38, 398, 1366, 1685). One of the specimens (No. 1366) is a fragment of sawed marble and may be a portion of a lamp base.

TREE SECTION (No. 1891). From an ash located in front of the South Officers' Quarters. The section is from the main trunk which was dead.

WOOD, MISCELLANEOUS (Nos. 95, 96, 586, 1244, 1274, 1538, 1539, 1612, 1613, 1726).

OBJECTS OF NATIVE MANUFACTURE:

Bead (No. 512). Broken bead of dentalium shell.

Gaming pieces (No. 1771). Eight circular pieces of clear sheet glass, probably fragments of window pane, roughly smoothed by hand at the edges. These are probably gaming pieces used in the native plum-stone game. Similar pieces of both glass and modern earthenware, have been found at the sites of Like-a-Fishook Village and Fort Berthold II (32ML2) and elsewhere.

Grinding slab (No. 638). A burned, broken, fine-grained basaltic slab 8 inches wide by 13½ inches long. It had been deeply pecked over the central portion of one surface and ground to a basin shape. It had subsequently been used in the masonry footing of the Bakery where it was found.

End scraper (No. 1665). A bulbous flake of "Knife River flint" (brown chalcedony) chipped over most of the upper surface and with secondary chipping along the edges.

Flake (Nos. 1–5, 1666). Six slightly modified flakes, probably used as scrapers, also made of "Knife River flint."

Worked bone (Nos. 1667, 1890). One (No. 1890) is a small, blocklike portion of scapula, with a cut hole in the center; perhaps a shaft wrench. The other (No. 1667) is a lightly incised distal end of a humerus. Neither was of identifiable species.

CONCLUSION

The documentary record of physical structures of the permanent military post known as Fort Stevenson is remarkably full and detailed. The post archives have been preserved, apparently without major gaps, and these provide a good record of the design and construction of the fort. The interesting personal record preserved in the journal kept by General de Trobriand supplements these documents in several ways, as do certain pictorial records. The total range of information available in customary historical sources concerning this western military post may very well be unique. These facts are now supplemented by a body of archeological data concerning the site.

The preservation of good documentary sources concerning the post is especially fortunate in view of the fact that the physical remains of the various structures once comprised in Fort Stevenson had undergone major changes and alterations before archeological work became possible. The history of these buildings would at a great many points be obscure were the documentary record missing. No single structure of the military period had survived above ground, even in ruin. Alteration of the site through extensive and disastrous fires, followed by intentional demolition and plundering of various ruins for usable building materials, had sharply reduced the information that could be obtained through archeological investigation. The excavations made at the site have, however, permitted some final additional observations on the site as well as providing, for the first time, actual object materials properly documented, for permanent preservation.

Experience gained at this site may, perhaps, serve as a caution to archeologists elsewhere concerned with any site, historic or prehistoric, that has been subjected to extensive and obvious changes subsequent to the period of its use, or at which such changes may be suspected. In this instance, little had been preserved for study, aside from the inevitable smaller "artifactual" materials, beyond the most massive and resistant kinds of construction, such as the well-protected stone masonry. Little more than the general plan of the whole post and of the general nature of individual buildings could have been learned by excavation alone. In rare instances, vestiges of above-ground structures, the buildings proper, afforded details of design and construction. Incautious speculation in such instances, based solely upon archeological evidence, might lead to unwarranted conclusions. In this case, the documentary sources constitute primary evidence, the archeological data being of subordinate significance. For other sites, at which documentary evidence may be inadequate, the situation may, of course, be reversed. In still other instances, archeological evidence may afford information nowhere else available, and constitute the sole surviving evidence for historical study.

The investigation of the site of Fort Stevenson was accomplished because of the existence of a practical problem. The impending obliteration of the site (with many others, prehistoric as well as historic), with the filling of Garrison Reservoir, dictated that investigation be made of the actual historical values that were to be lost. Manifestly, knowledge of physical remains of man's history is inadequate until actual excavation, however limited, has been performed, and it is rarely possible to predict archeological findings. If in this instance new information obtained is limited, the experience can hardly be applied directly to other sites still uninvestigated. Irreplaceable information may be lost at many sites unless actual excavation is performed, and the hope of adding significant bits to the mosaic of history amply justifies investigation of sites even of recent provenience. Even more recent periods of western history seem to warrant comparable field study, not yet made. An example is the little-known physical history of townsites widely scattered over the West. In the Garrison Reservoir area there were several such sites, some not established until after 1900, for which there was little or no documentary evidence (e.g., Old Garrison, Expansion, Ree, and others (see Mattison, 1955)). In those instances, excavation might have afforded information nowhere else available—however, the opportunity for that work is gone.

Salvage archeology has now been accomplished at the historic site of Fort Stevenson. It is believed that these investigations establish two facts. It seems clear that the physical resources of the site were definitely limited, and supplement the documentary record in only minor ways. The results obtained also suggest that the general significance of the surviving remains was somewhat meager. However, a comparative study of selected sites of similar provenience would seem to offer prospects of knowledge of wider significance than any further data concerning Fort Stevenson itself. The need for continued work on such subjects is apparent. Little more than a beginning has been made on investigations of historic sites of such relatively late dates in the West, and while there is no way of predicting the value of such studies, they should be a worthwhile addition to customary historical research. These historical resources are immediately related to modern history in the American West—perhaps even more intimately and directly than those of native Indian affiliation. There is little question of the value or importance of archeological sites, whether historic or prehistoric. Each has a contribution to make to knowledge of man's use of these regions, and each should be investigated as time and opportunity permit.

APPENDIX

CARTRIDGES AND BULLETS FROM FORT STEVENSON, NORTH DAKOTA

By Carlyle S. Smith

The cartridges and bullets from Fort Stevenson fall into two groups on the basis of age: (1) Specimens attributable to the military use of the site from 1867 to 1883, and (2) those dropped on the site by hunters and casual visitors from about the time of its abandonment by the U.S. Army until shortly before its excavation in 1951. Most of the identifications were made on the basis of familiarity with firearms and ammunition. Additional facts were obtained from ammunition catalogs and from Logan's excellent pictorial digest.[1]

This study serves as an experimental check on the dating of sites through the use of objects of White origin. It must be recognized, however, that the military have always been subject to sudden changes in equipment with the discard of the obsolescent in the interests of uniformity. Such would not be the case in regard to the use of objects of White origin in an aboriginal or other nonmilitary setting.

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[1] Logan, Herschel C., Cartridges. Standard Publications, Huntington, W. Va. 1948.

The cartridges and bullets from the occupation by the U.S. Army reveal that two principal military rifles were in use: The .50-caliber Springfield rifle introduced into the service in 1866, improved in 1868 and 1870 and discarded after 1873, and the .45-caliber Springfield rifle introduced in 1873, improved in 1884 and 1888 and discarded after 1892. The .50-caliber Sharps and Remington arms may have been present too. One or more, already obsolete, muzzle-loading rifled muskets of the Civil War were also in use. A Henry rifle, or a Model 1866 Winchester, using the .44 Henry cartridge was present, along with .45-caliber Colt revolvers, a .54-caliber Burnside carbine and, possibly, a 12-gage shotgun.

The specimens pertaining to the military occupation of the site furnish the following dates of manufacture: 1855–65, 1861–65, 1866–1880, October 1866 to March 1868, 1868–1880, May to December 1871, 1873–1890, 1873–1900, June 1880, February 1881, April 1881, April 1882. Discounting the extreme time spans based on typology, the dates conform with the documentation remarkably well: ca. 1865–1885.

The cartridges dating from after the military occupation indicate the use of a .22-caliber rifle, lever action hunting rifles of moderate power, high-power bolt action rifles, a .38-caliber revolver, and some shotguns. Most of the weapons were designed for the use of smokeless powder, which did not come into general use until after 1900. The dates of manufacture are less satisfactory than those pertaining to the military occupation of the site because they fall within the period when technological change in firearms and ammunition had reached a more static level and also because old designs persist in use longer among civilians. Most of the cartridges are indistinguishable from those manufactured and sold today. The dates are as follows: 1886–1901, 1887–1940, and from 1890, 1900, 1902, 1906, and 1913 to date. The specimens may have been dropped on the site at intervals from 1886 to 1951 or the bulk of them may pertain to no more than two hunting parties, one about 1900, the other after 1913. The presence of both shotgun shells and rifle cartridges, however, suggests seasonal hunting for birds and larger game.

In the detailed analysis below, the specimens belonging to the second group are marked by asterisks (*) in front of the paragraph numbers.

SEPARATELY PRIMED CARTRIDGE:

1. .54 Burnside, brass. Case tapered to rear and perforated to receive the flash from a separate percussion cap placed on the nipple mounted in the breechblock. Manufactured by the Burnside Rifle Company, Providence, R.I., for use in the Burnside cavalry carbine ca. 1861–65. The U.S. Ordnance Department purchased 21,819,200 of these cartridges for use in the Civil War.
   Catalogue No.: 1236 -- Total 1

RIM-FIRE CARTRIDGES:

*1. .22 Long Rifle, copper, sunken letter "H" on base. Complete cartridge. Manufactured by Winchester from 1890 to date.
Catalogue No.: 1858/1 -- Total 1

2. .44 Henry, copper, raised letter "H" on base. Older marking than sunken letter. Manufactured by Winchester from ca. 1866–1890 for use in Henry rifle, patented in 1860, for the Model 1866 Winchester and for several single-shot rifles. This cartridge was fired in either a Henry or a Winchester on the basis of double-firing pin marks.
Catalogue No. 1858/3 -- Total 1

CENTER-FIRE, INTERNALLY PRIMED CARTRIDGES:

1. .45 Colt Revolver, copper. Complete cartridge. Benét cup primer. Manufactured at Frankford Arsenal ca. 1873–90, for use in Colt Single-Action Army Revolver.
Catalogue No.: 1475/3 (illustrated pl. 20, *b*) ---------------- Total 1

2. .45 Government (.45–70), copper. Benét cup primer. Manufactured at Frankford Arsenal from 1873 to ca. 1882 for use in U.S. Model 1873 and later carbines and rifles.
Catalogue Nos.: 539, 1128, 1356/6, 1475/8, 1661/1, 1763/2 (illustrated example pl. 20, *d*) -- Total 6

3. .45 Government. Same as No. 2 above but stamped for rifle (R), Frankford Arsenal (F), and dated: June 1880 (6–80), February 1881 (2–81), and April 1881 (4–81).
Catalogue Nos.: 90, 540, 1858/4 -- Total 3

4. .50 Government (.50–70), copper. Bar anvil primer. One complete cartridge. Manufactured at Frankford Arsenal from October 1866 to March 1868 for use in U.S. Model 1866 and later rifles, also Sharps carbines.
Catalogue Nos.: 538, 960, 961, 963, 987, 1122, 1123, 1808/2, 1808/4, 1834, 1856/6, 1858/7, 1125 (illustrated example pl. 20, *a*) ----- Total 13

5. .50 Government (.50–70), copper. Bar anvil primer. Blank cartridge. Manufactured at Frankford Arsenal from October 1866 to March 1868 for use in same arms as number 4 above.
Catalogue No.: 399 -- Total 1

6. .50 Government (.50–70), copper. Benét cup primer. Manufactured at Frankford Arsenal from March 1868 until about 1880 for use in same arms as No. 4 above.
Catalogue No.: 1808/1 (illustrated pl. 20, *c*) ---------------- Total 1

7. .50 Government (.50–70), copper, deep annular depression in base Martin primer. Manufactured at Frankford Arsenal from May to December 1871 for use in same arms as No. 4 above.
Catalogue No.: 544 -- Total 1

CENTER-FIRE, EXTERNALLY PRIMED CARTRIDGE:

*1. .250 High Power, brass case. Manufactured by Remington-Union Metallic Cartridge Co. since ca. 1913 for use in Savage Model 1899 and similar rifles.
Catalogue No.: 1721/7 -- Total 1

*2. .30–30 brass. Manufactured by Remington-Union Metallic Cartridge Co. since 1902 for use in Model 1894 Winchester and similar rifles.
Catalogue No.: 1475/2 -- Total 1

*3 .30–30, brass. Manufactured by Western Cartridge Co. since ca. 1900 for use in same arms as No. 2 above.
Catalogue Nos.: 1126, 1356/2 -- Total 2

Center-fire, externally primed cartridge—Continued

*4. .30–30, brass. Manufactured by Winchester since 1894 for same arms as No. 2 above.
Catalogue Nos.: 1356/3, 1475/4 ---------- Total 2

*5. .30 Government, Model 1906 (.30–'06), brass. Manufactured by Remington-Union Metallic Cartridge Co. since 1906 for use in Springfield Model 1903 and similar rifles.
Catalogue No.: 1475/9 ---------- Total 1

*6. .303 British, brass. Manufactured by Winchester since 1897 for use in British Army rifles and similar arms.
Catalogue No.: 1609 ---------- Total 1

*7. .32 Special, brass. Manufactured by Remington-Union Metallic Cartridge Co. since 1902 for use in Winchester Model 1894 and similar rifles.
Catalogue Nos.: 1121, 1356/4 ---------- Total 2

*8. .32 Special, brass. Manufactured by Winchester since 1902 for use in same arms as No. 7 above.
Catalogue Nos.: 1120, 1124, 1356/5, 1475/6, 1475/7 ---------- Total 5

*9. .38–56, brass. Manufactured by Winchester from ca. 1887–1940 for use in Winchester Model 1886 rifle and single shot rifles.
Catalogue No.: 1356/1 ---------- Total 1

*10. .38 Smith and Wesson, brass. Manufactured by Union Metallic Cartridge Co. from ca. 1890–1901 for use in Smith and Wesson revolvers and similar arms.
Catolague No.: 1661/3 ---------- Total 1

*11. .40–82, brass. Manufactured by Union Metallic Cartridge Co. between 1886 and 1901 for use in Winchester Model 1886 and single shot rifles.
Catalogue No.: 1661/3 ---------- Total 1

*12. .44–40, brass. Manufactured by Winchester in this form since about 1900 for use in Winchester Model 1873, similar rifles, and in revolvers.
Catalogue Nos.: 1237, 1475/5 ---------- Total 2

13. .45 Colt Revolver, brass. Maker unknown. For use in Colt Single-Action Army Revolver ca. 1880.
Catalogue No.: 1858/2 ---------- Total 1

14. .45 Government (.45–70), copper. Stamped for rifle (R), made at Frankford Arsenal (F), in April (4), 1882 (82). For use in U.S. Model 1873 and later arms.
Catalogue Nos.: 400, 545, 962, 1661/2, 1721/2, 1721/4 ---------- Total 6

15. .45 Government (.45–70), brass. Manufactured by Phoenix Cartridge Co. ca. 1880 for use in same arms as number 14 above.
Catalogue Nos.: 541, 1119, 1127, 1475/1, 1525/1, 1525/2, 1721/1, 1721/3 1721/5, 1721/6, 1808/3 ---------- Total 11

16. .50 Government (.50–70), brass. Maker unknown. Manufactured ca. 1880 for use in U. S. Model 1866 and later rifles, also Sharps carbines.
Catalogue Nos.: 476, 542, 543, 546, 1763/1, 1858/5 ---------- Total 6

Shotgun shells, center-fire, externally primed:

1. 12-gauge, low-base, brass, paper missing. Manufactured by Winchester ca. 1880.
Catalogue No.: 1764 ---------- Total 1

*2. 12-gauge, low-base, brass, paper missing. "New Rival," manufactured by Winchester ca. 1890–1900.
Catalogue Nos.: 1476/2, 1610 ---------- Total 2

SHOTGUN SHELLS, CENTER-FIRE, EXTERNALLY PRIMED—Continued

*3. 12-gauge, high-base, brass, paper missing. "Leader," manufactured by Winchester, probably after 1900, for smokeless powder loads.
Catalogue Nos.: 1129, 1476/1 ---------- Total 2

*4. 12-gauge, low-base, brass, paper missing. "Sure Shot," manufactured by Western Cartridge Co., probably after 1900.
Catalogue No.: 1662 ---------- Total 1

*5. 12-gauge, low-base, brass, paper missing. "New Club," manufactured by Remington-Union Metallic Cartridge Co. after 1902.
Catalogue Nos.: 772, 1355/1 ---------- Total 2

*6. 12-gauge, high-base, brass, paper missing. "Nitro Club," manufactured by Remington-Union Metallic Cartridge Co. after 1902 for smokeless powder load.
Catalogue Nos.: 1355/2, 1355/3 ---------- Total 2

*7. 10-gauge, low-base, brass, paper missing. "Climax," marking in sunken channel with raised letters. Manufactured by United States Cartridge Co. ca. 1900.
Catalogue No.: 1476/3 ---------- Total 1

*8. 10-gage, low-base, brass, paper missing. "Climax." Marking in sunken letters on flat base. Manufactured by United States Cartridge Co., probably after 1900.
Catalogue No.: 1272 ---------- Total 1

BULLETS:

1. .45-caliber conical bullet, lead, for .45 Government cartridges as listed above, ca. 1873–1900.
Catalogue No.: 1883 ---------- Total 1

2. .50-caliber conical bullet, lead, for .50 Government cartridges as listed above, ca. 1866–1880.
Catalogue No.: 547 ---------- Total 1

3. .58-caliber conical bullet, lead. Minié ball for use in Civil War rifle muskets, Models 1855, 1861, 1863, and 1864. Perforated with two holes for suspension as a fishing sinker or as an ornament. Last made in 1865.
Catalogue No.: 959 (illustrated pl. 20, *f*) ---------- Total 1

4. .58-caliber conical bullet, lead, zinc plug in base, tinned sheet-metal disk between. Used to shoot out the fouling in muskets listed under No. 3 above, and made ca. 1861–1865.
Catalogue No.: 343 (illustrated pl. 20, *e*) ---------- Total 1

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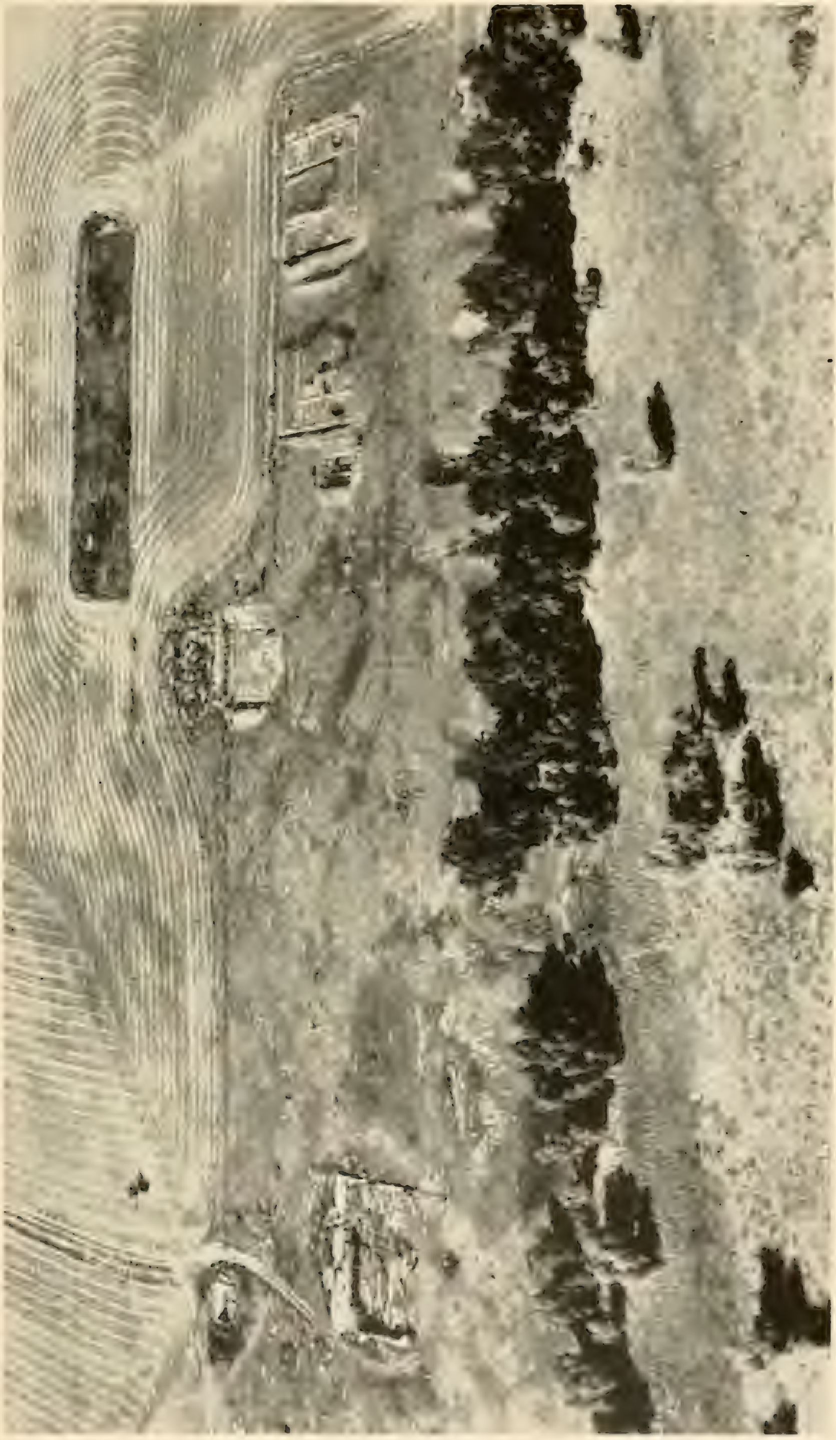
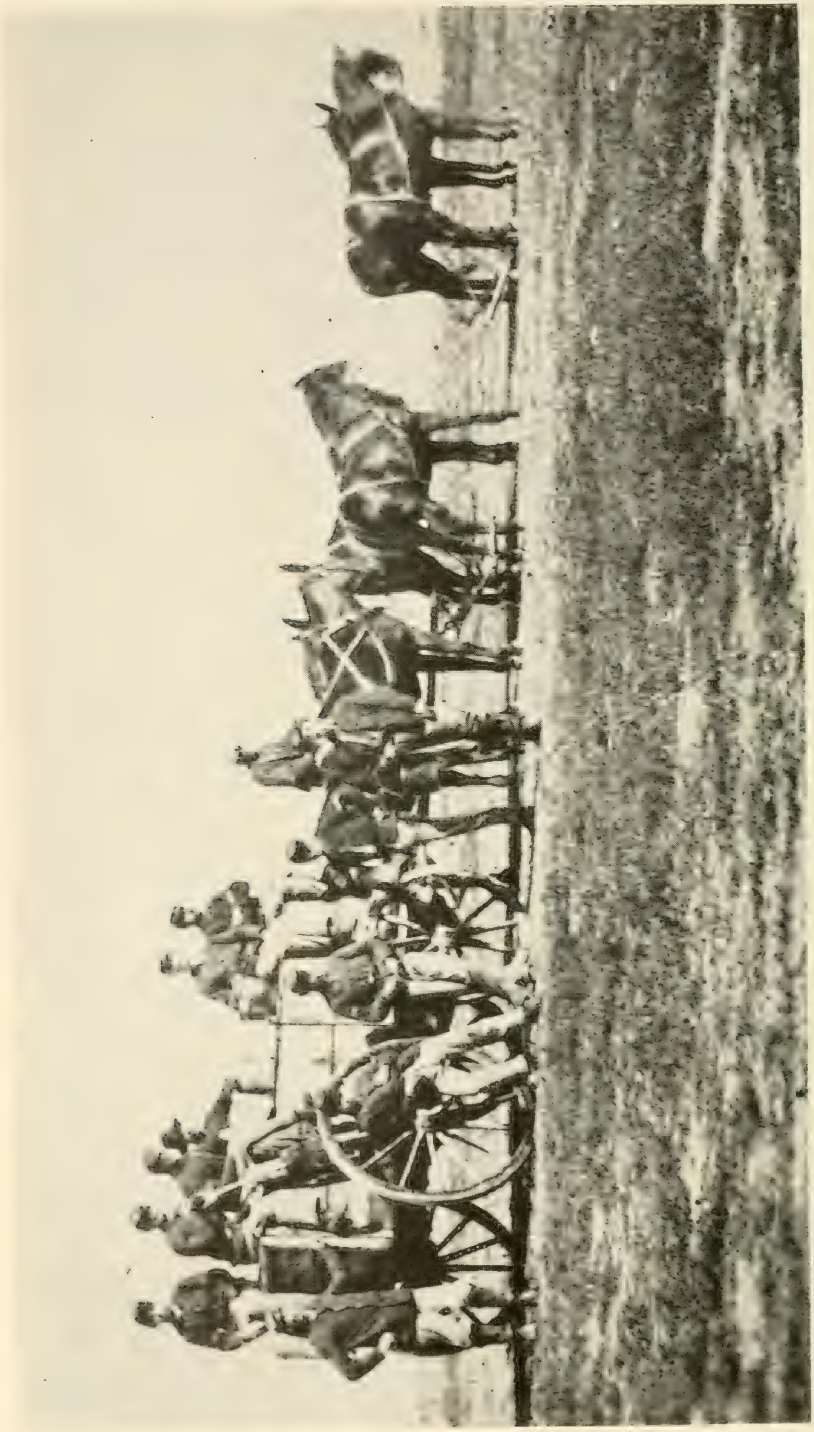
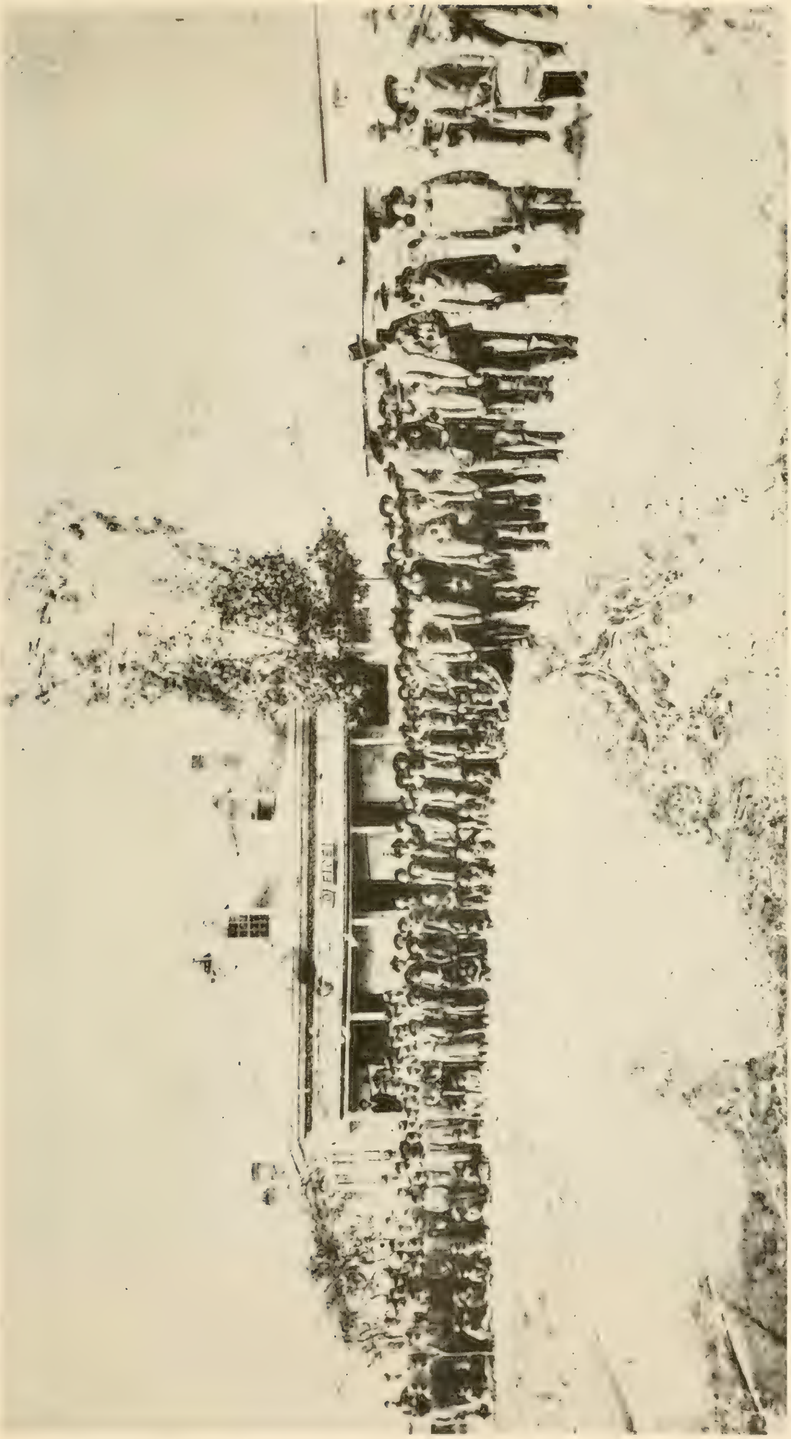


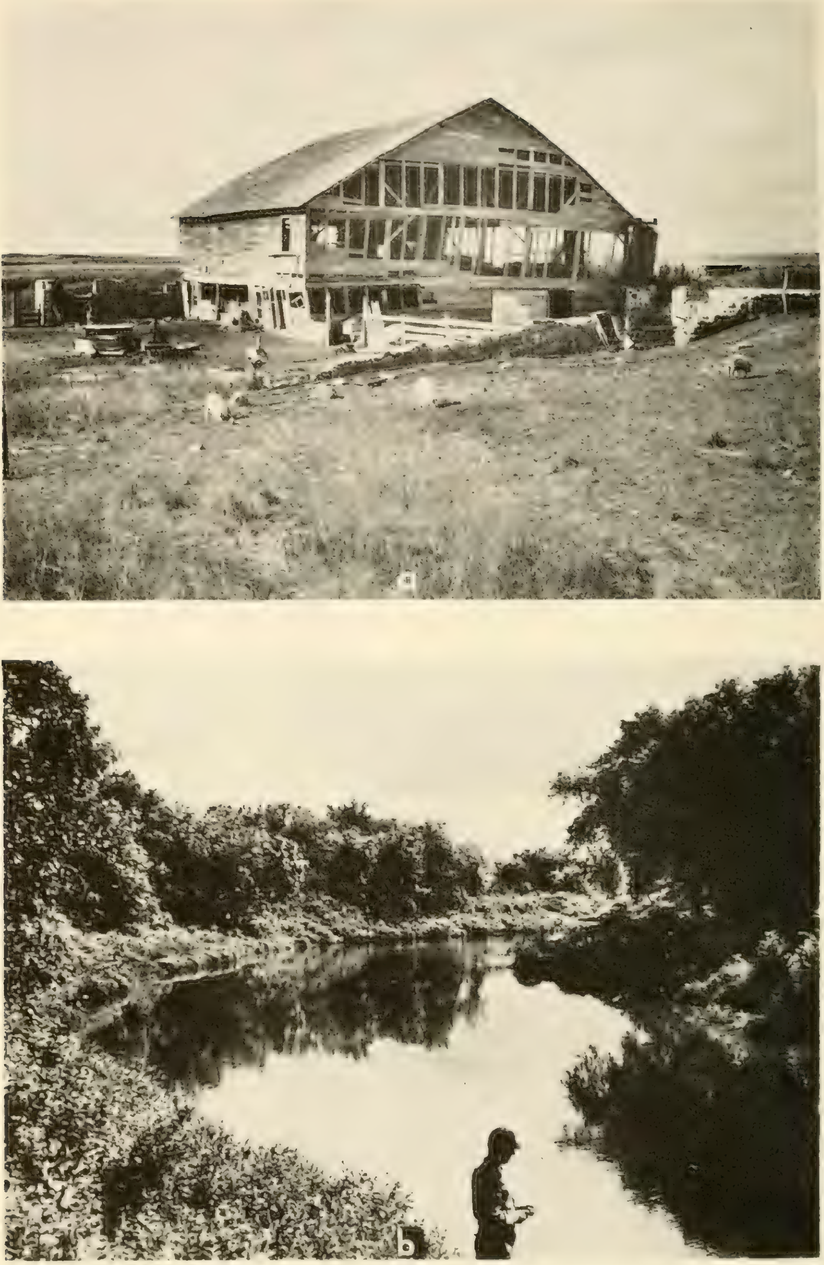
Aerial view of the site of Fort Stevenson after excavation.



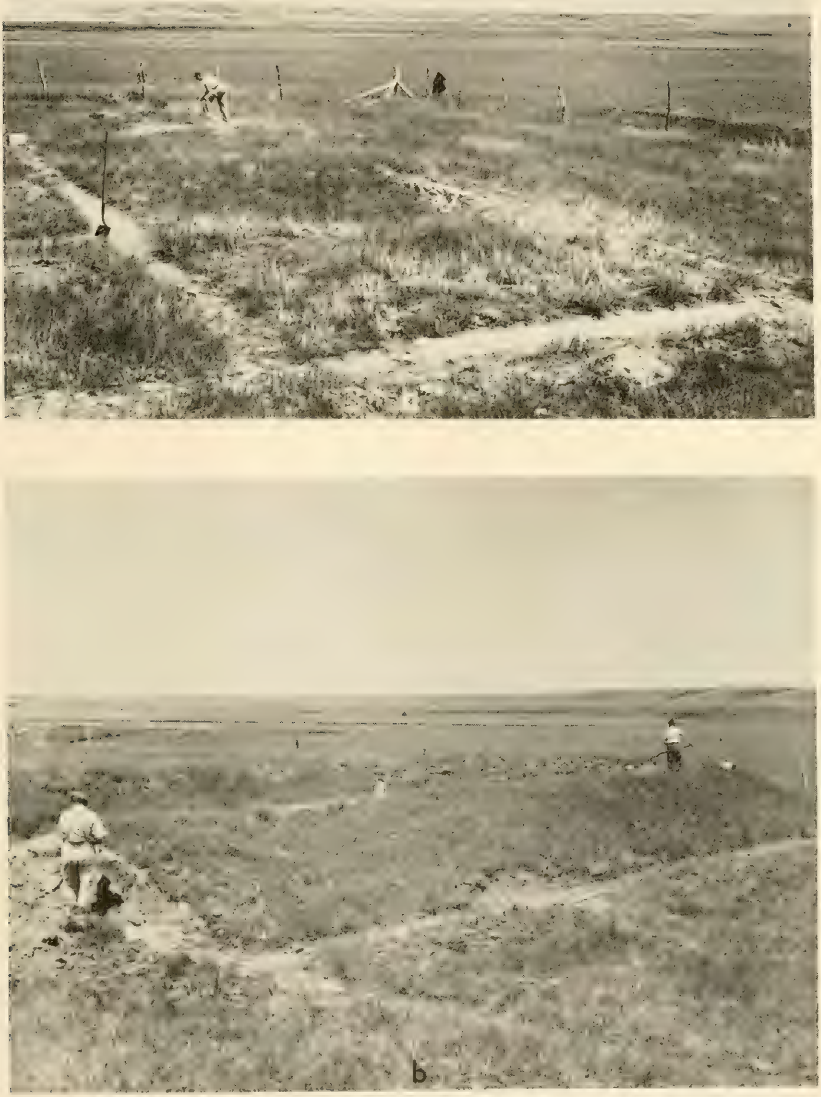
Water wagon detail at Fort Stevenson, ca. 1870.



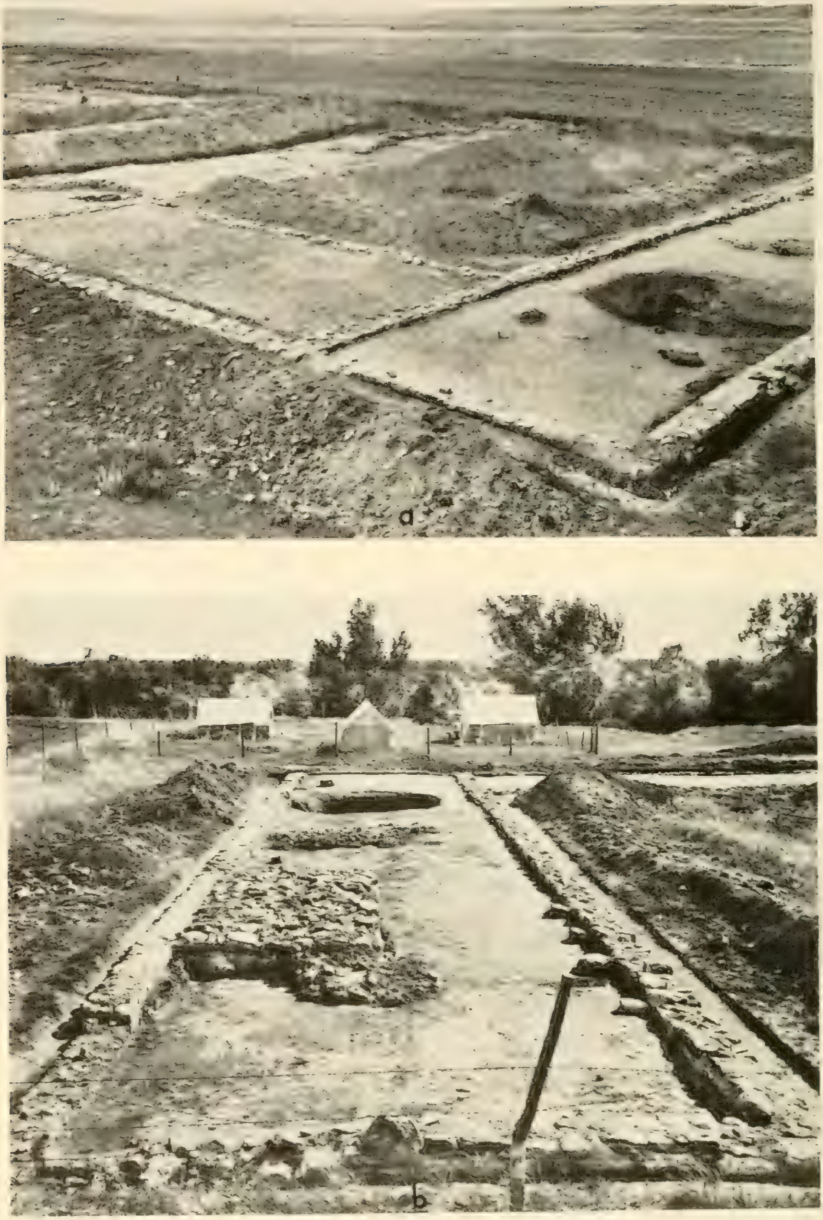
Indian children at the Fort Stevenson Indian School in the 1880's



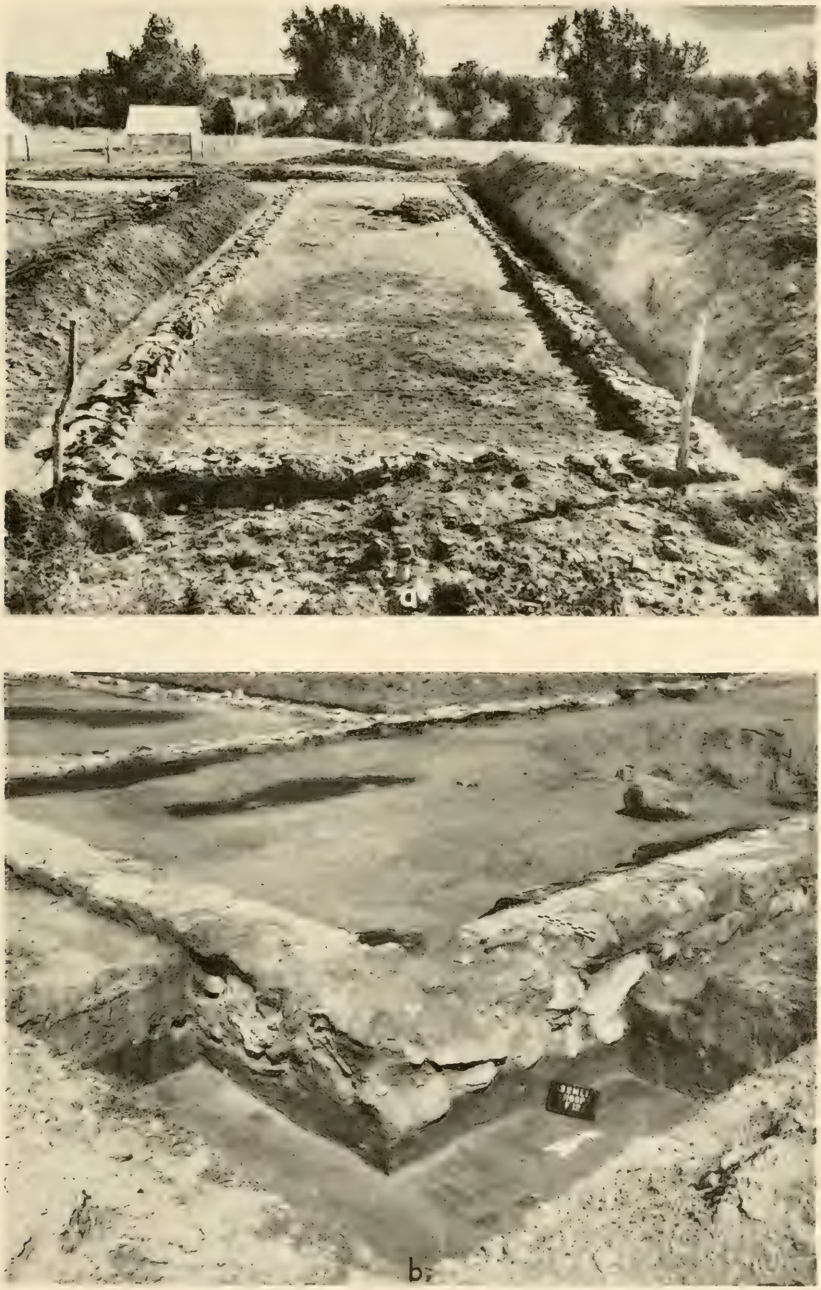
a, Barn of the Indian School period. *b*, Douglas Creek west of the site of Fort Stevenson.



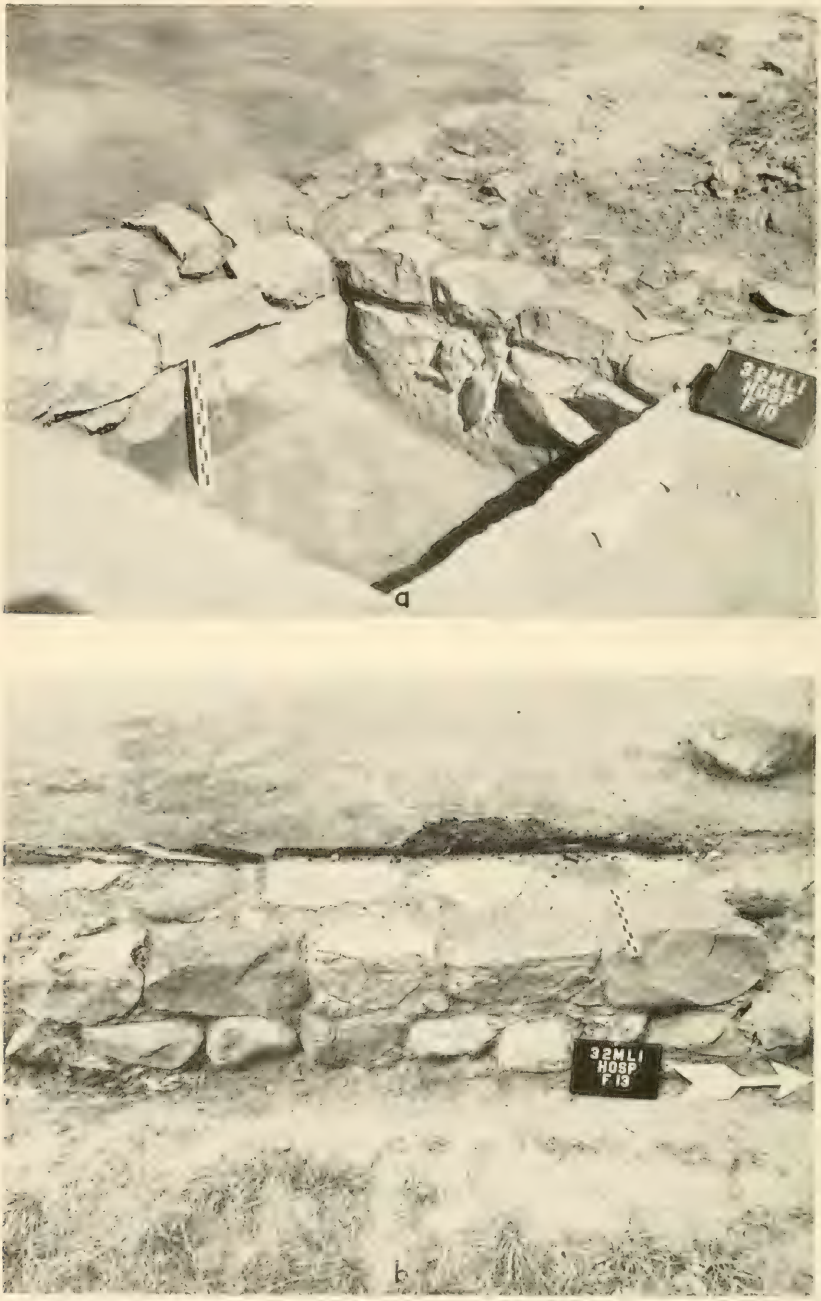
a, Beginning the excavation of the East Wing of the Hospital. *b*, Removing part of the recent (ca. 1915) potato cellar.



a, General view of excavated site of the Hospital. *b*, View of excavated site of East Wing of the Hospital.



a, View of excavated site of West Wing of the Hospital. *b*, Exterior view of footing of the southeast corner of the East Wing of the Hospital.


32ML1
HOSP
F 10
a
32ML1
HOSP
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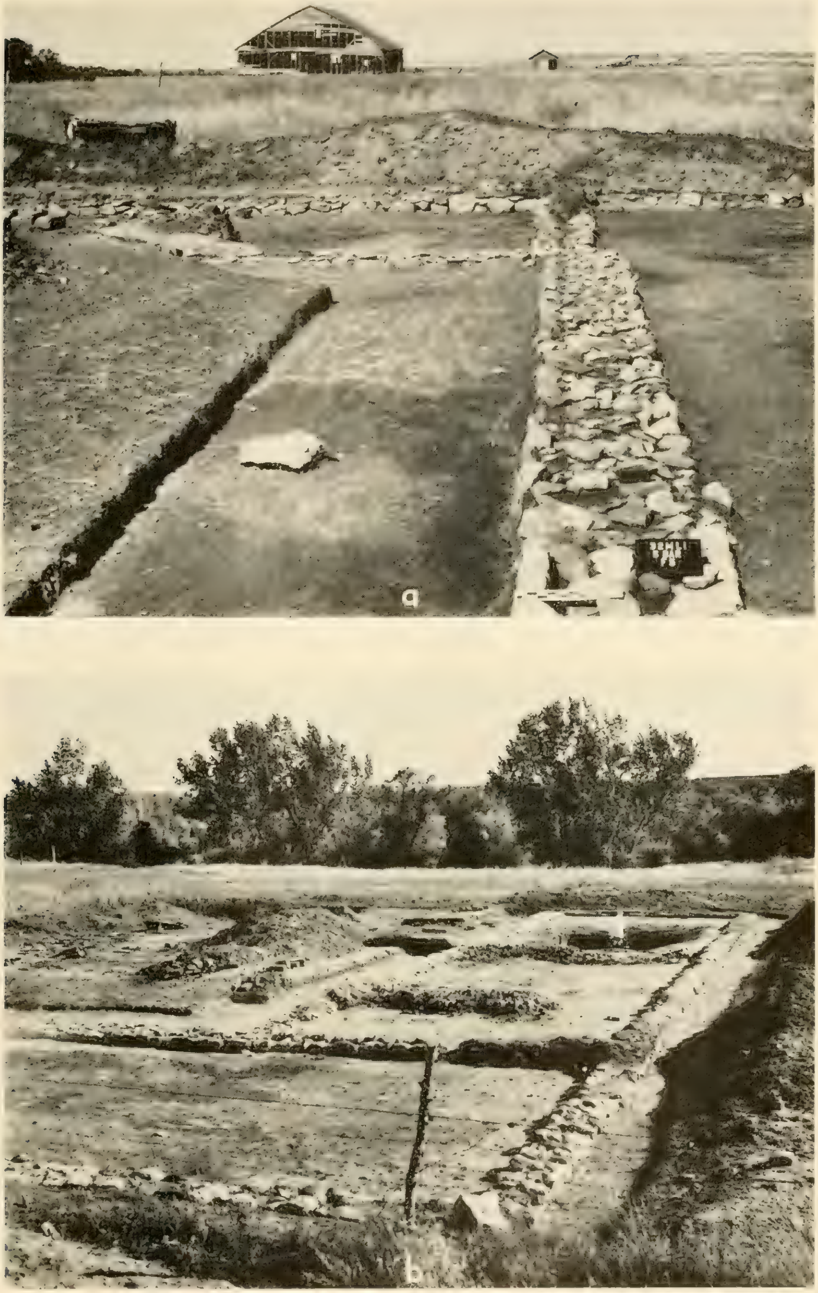
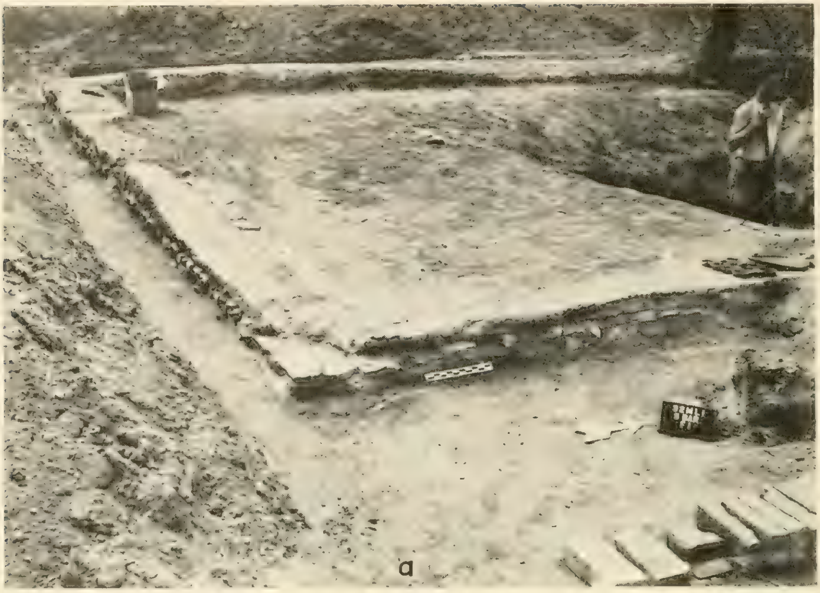
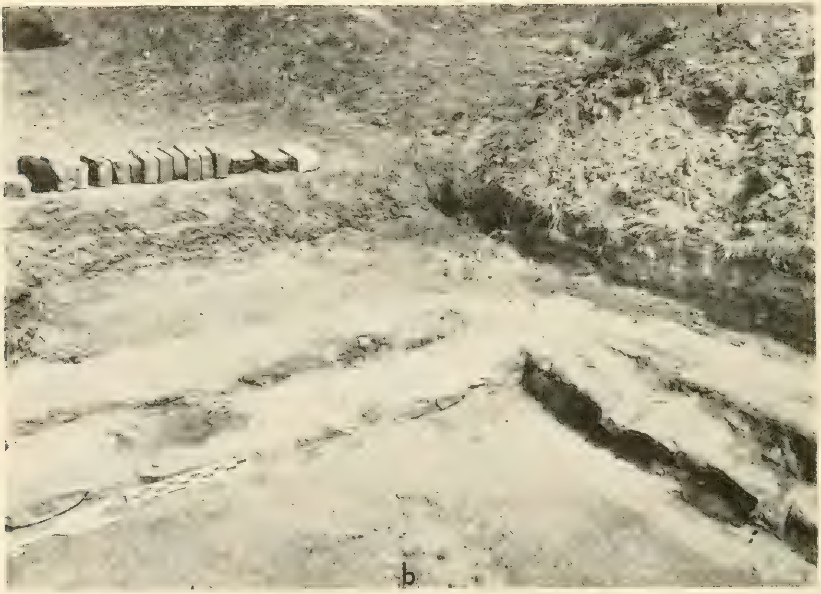
a, Interior view of footing of the northwest corner of the main body of the Hospital. *b*, Detail of stone masonry.

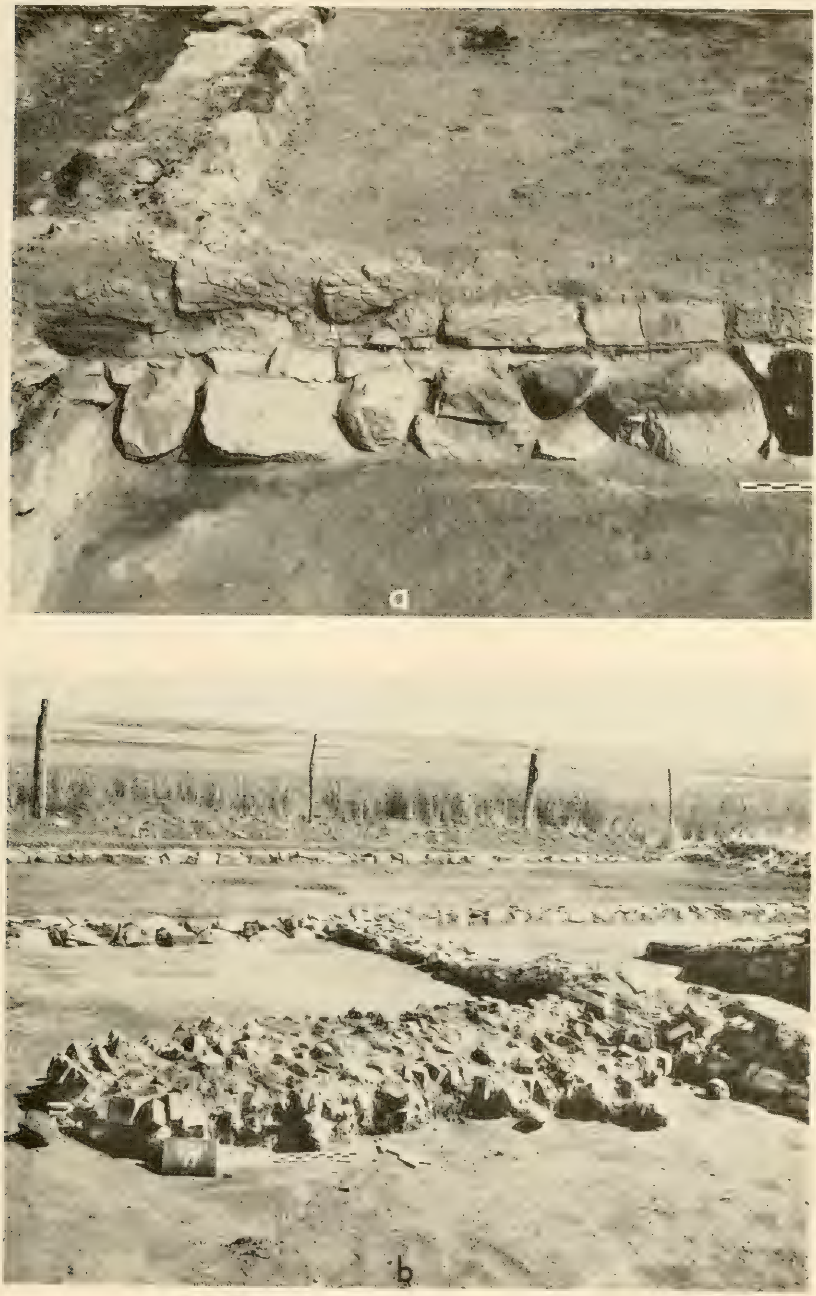


a, Rear wall footing of the main body of the South Barracks. *b*, General view of the West Wing of the South Barracks.

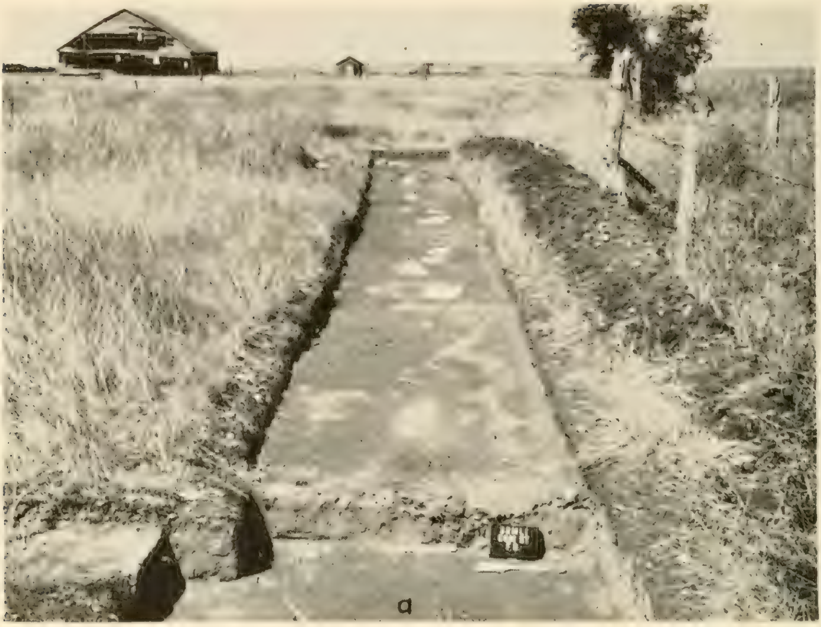


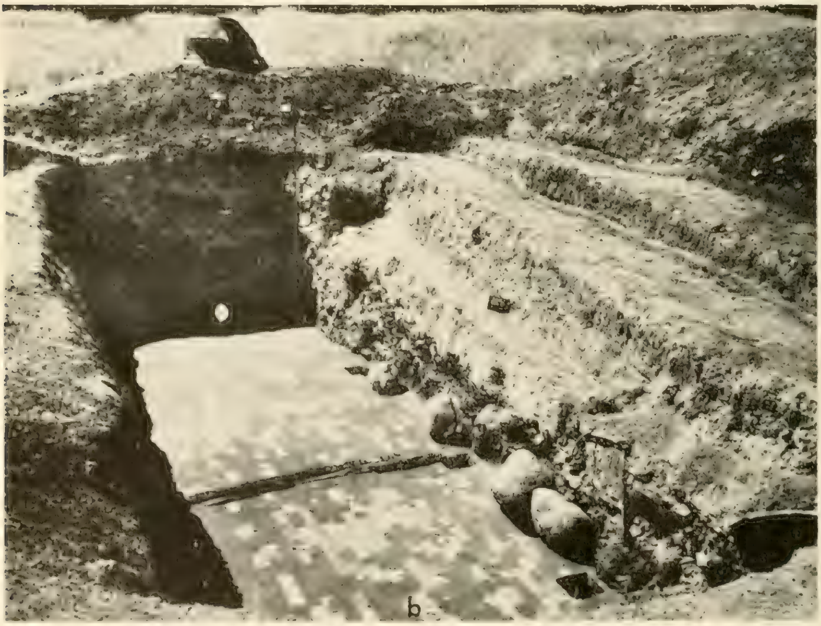


a, Exterior view of the southeast corner of the West Wing of the South Barracks. *b*, Interior view of the southeast corner of the West Wing of the South Barracks.

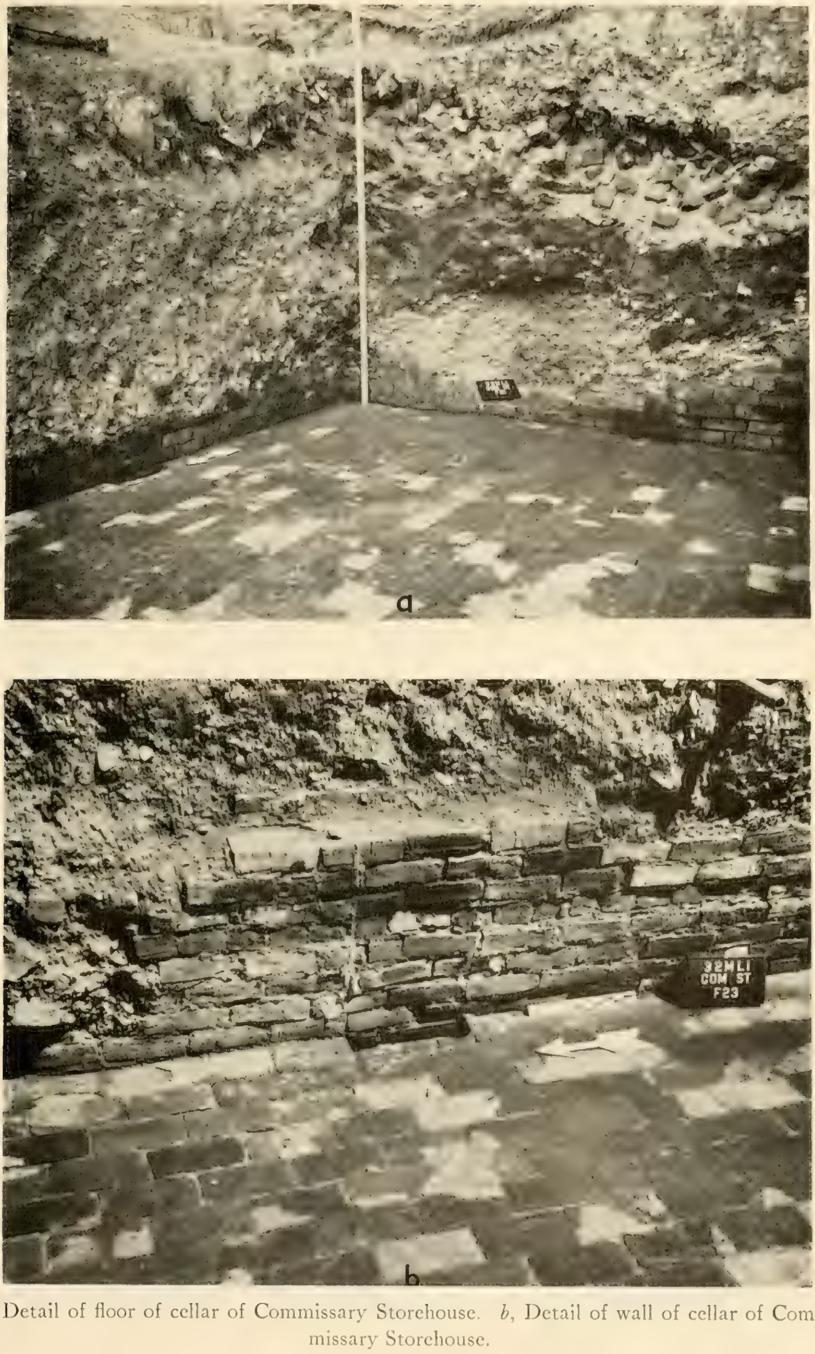


a, Detail of the adobe brick masonry wall remnants. South Barracks. *b*, Collapsed chimney. South Barracks.





a, Remnants of stone masonry footings. Commissary Storehouse. *b*, Excavated portion of cellar of Commissary Storehouse.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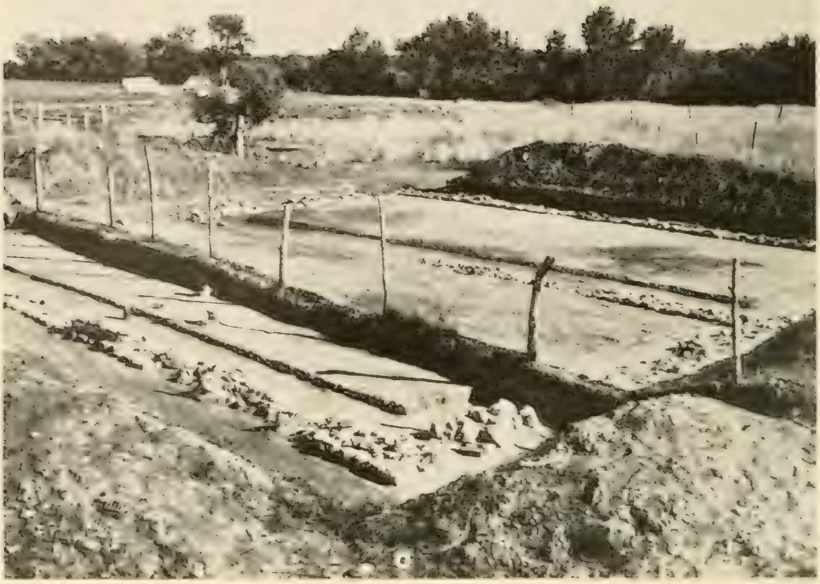
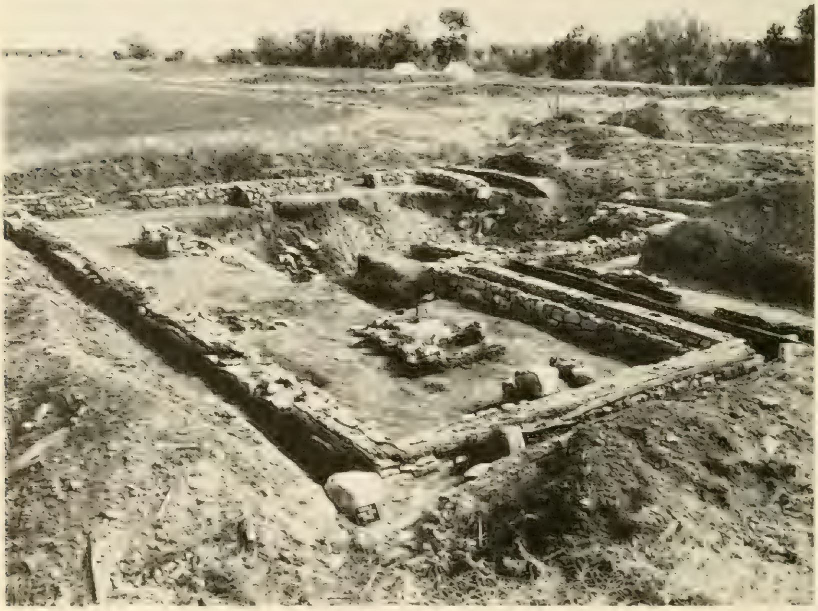
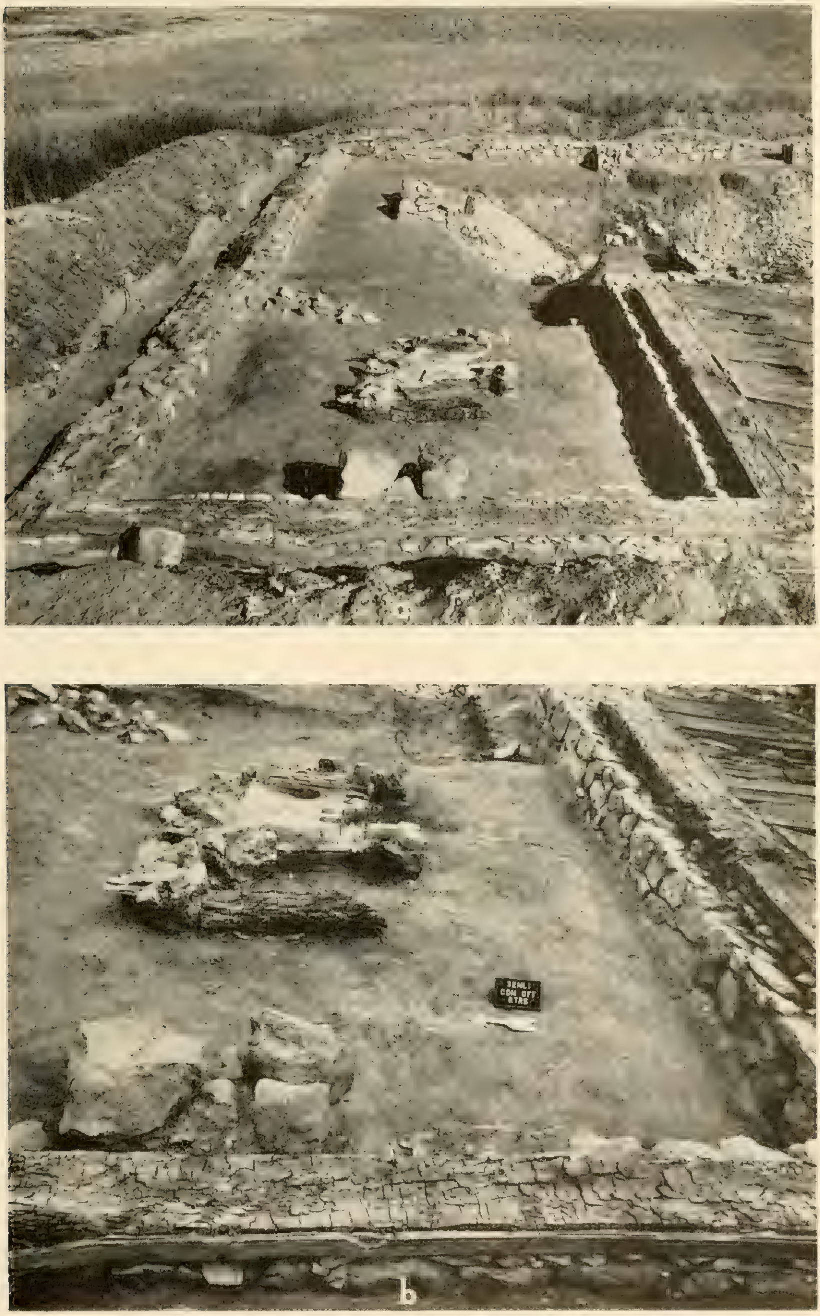
a, Detail of floor of cellar of Commissary Storehouse. *b*, Detail of wall of cellar of Commissary Storehouse.

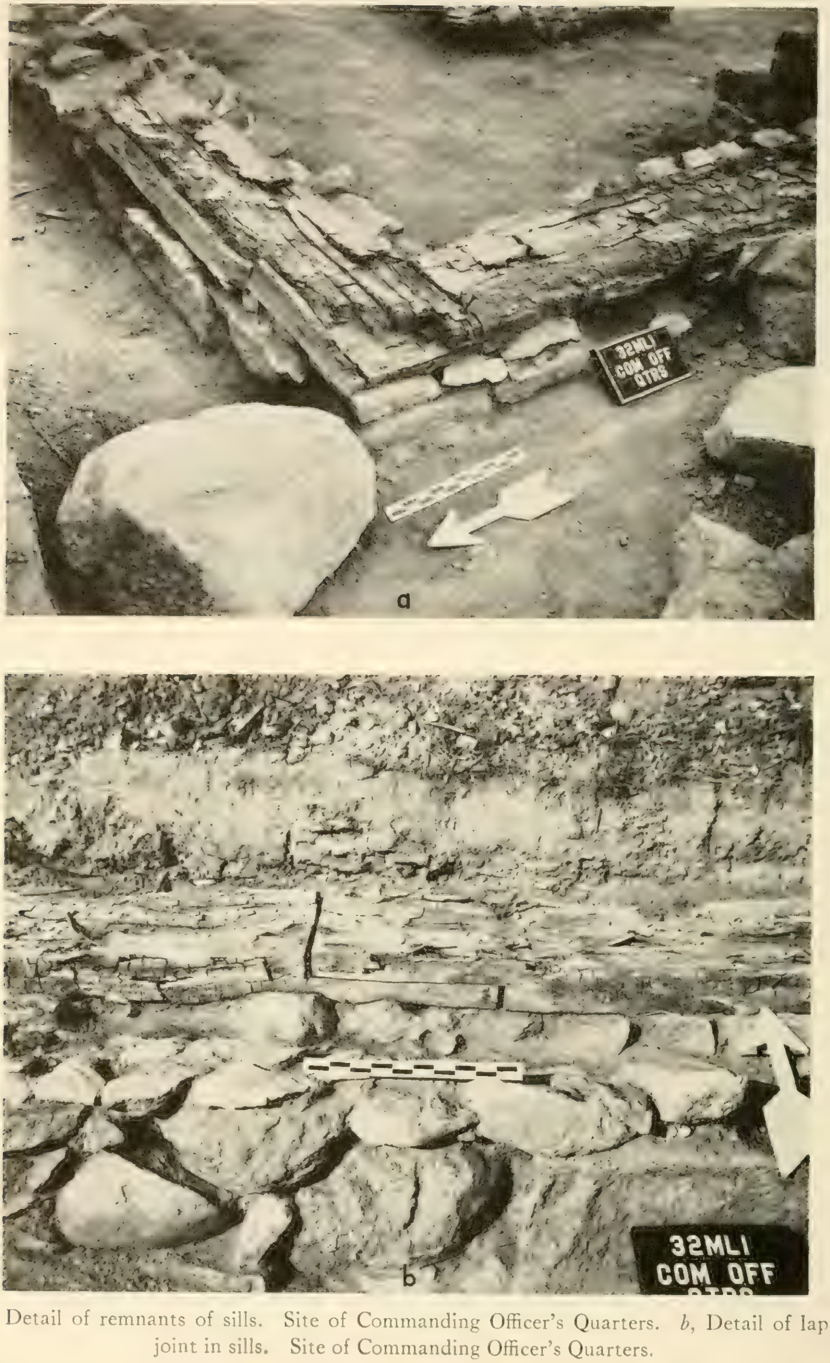




a, Excavated site of the South Officers' Quarters. *b*, Excavated site of the Commanding Officer's Quarters.



a, Interior of the north half of the site of the Commanding Officer's Quarters. *b*, Detail of interior of the rear wing (kitchen) of the site of the Commanding Officer's Quarters.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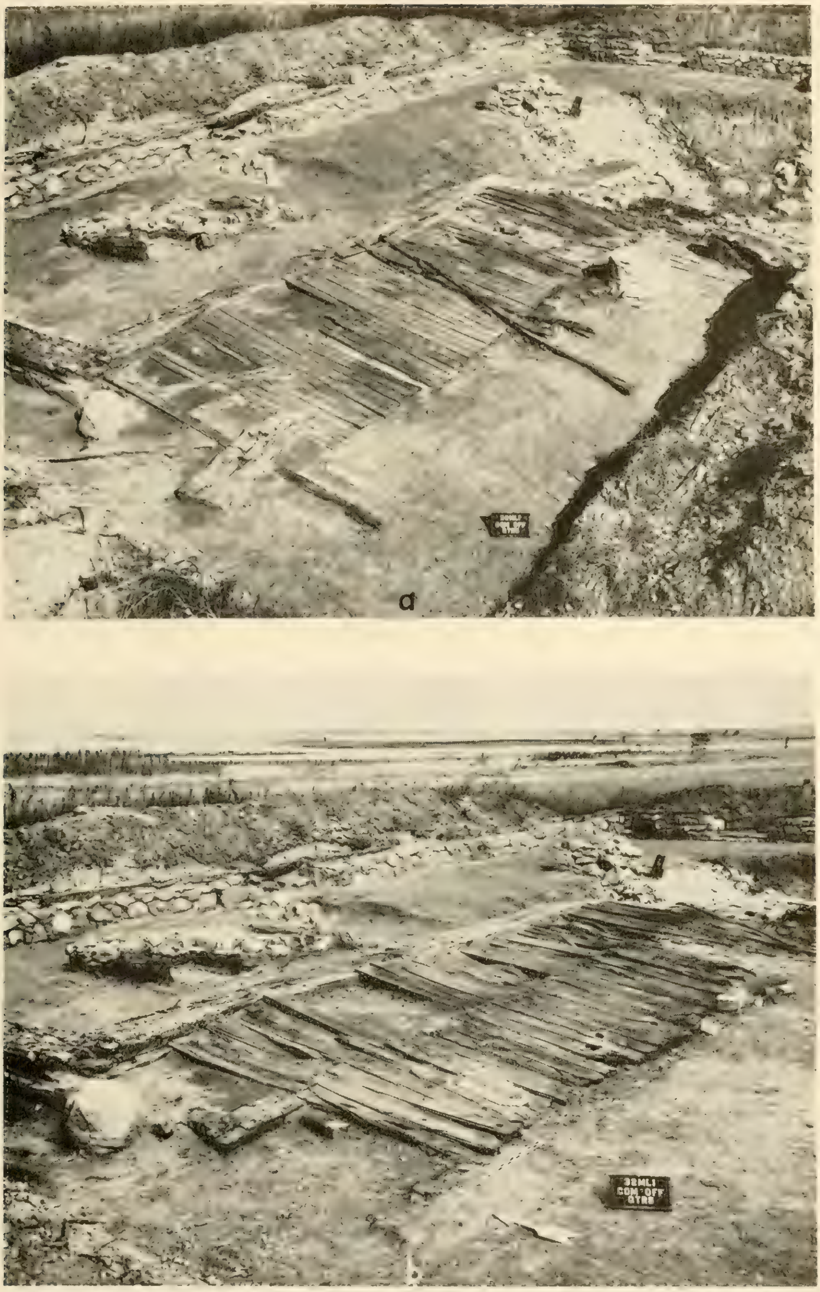
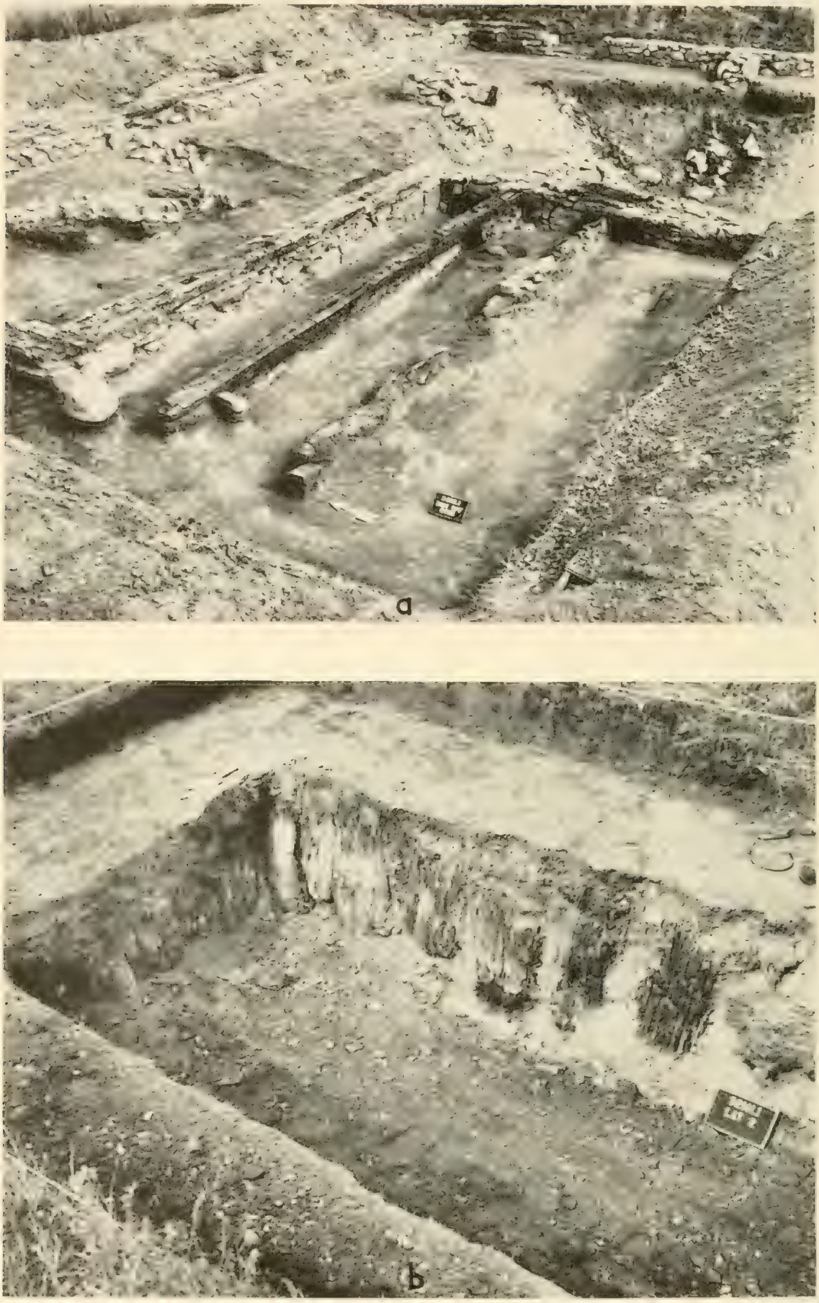
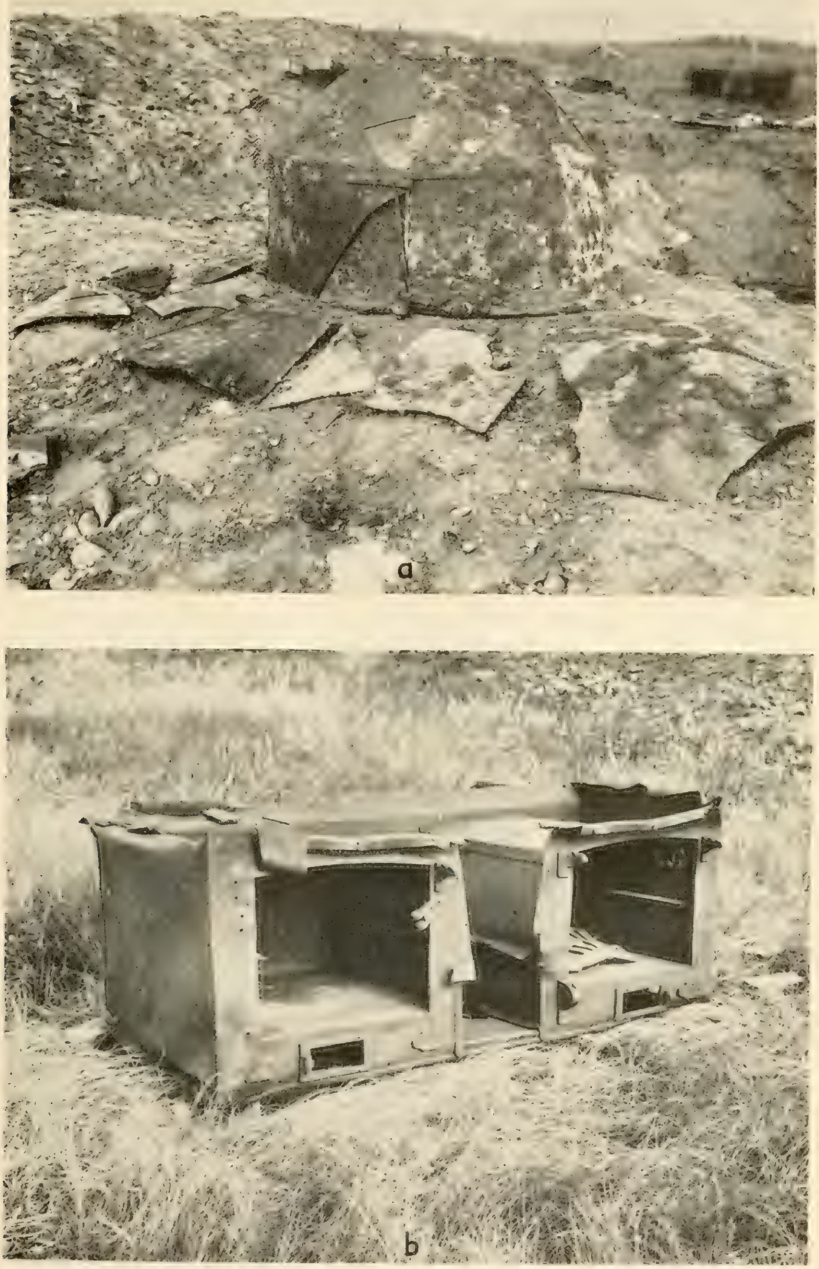
a, Detail of remnants of sills. Site of Commanding Officer's Quarters. *b*, Detail of lap joint in sills. Site of Commanding Officer's Quarters.



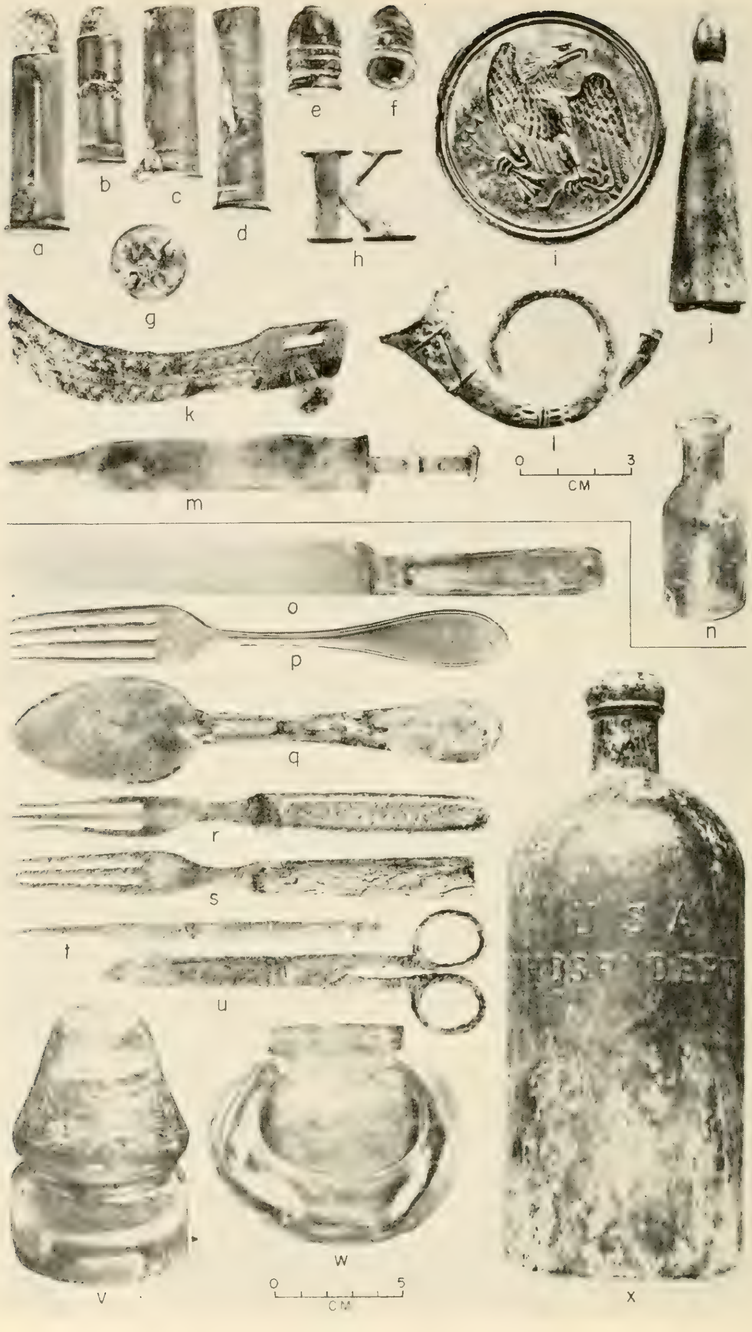
a, Remnants of late period porch attached to rear wing of Commanding Officer's Quarters.
b, Remnants of earlier porch attached to rear wing of Commanding Officer's Quarters.



a, Porch area of the rear wing of the Commanding Officer's Quarters showing sills. *b*, View of pit and timber cribbing of Latrine No. 2.



a, Furnace parts excavated at the site of the cellar of the Commissary Storehouse. *b*, Army style mess range.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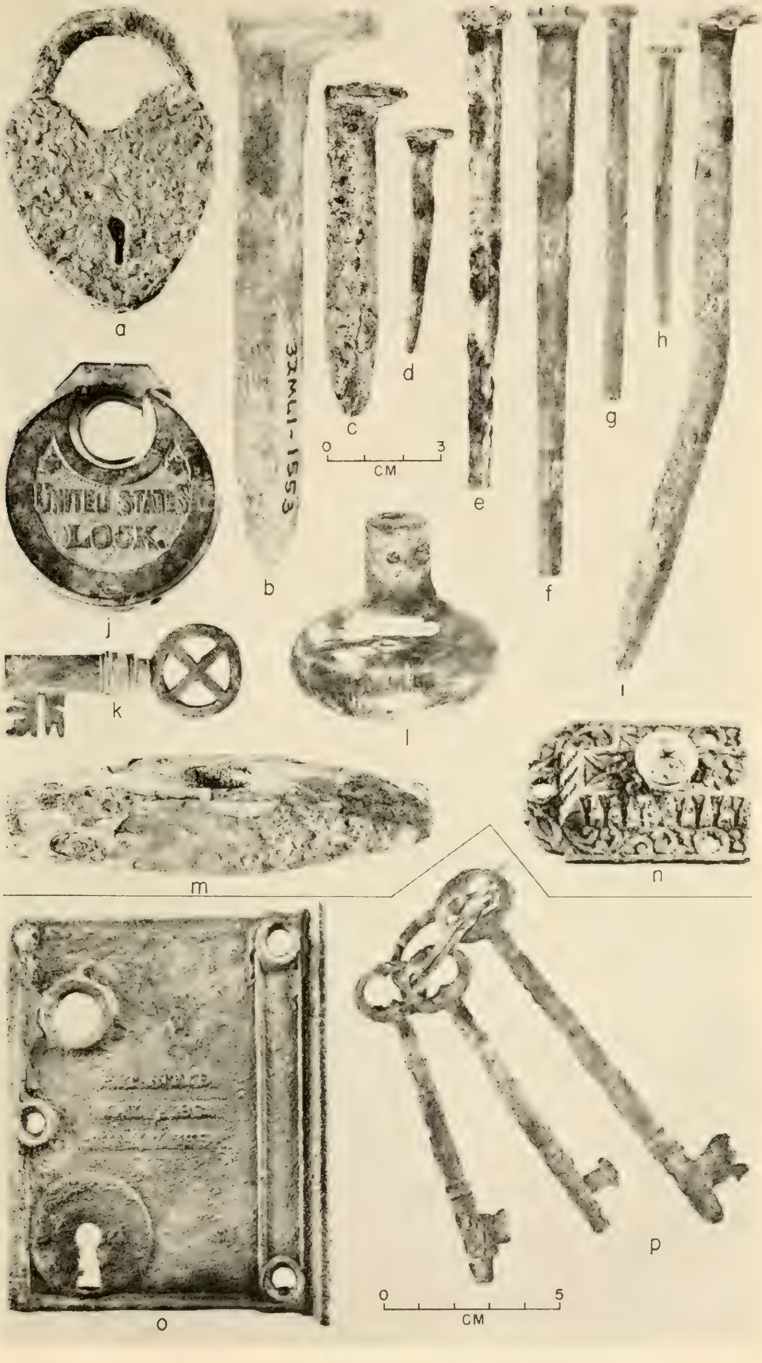
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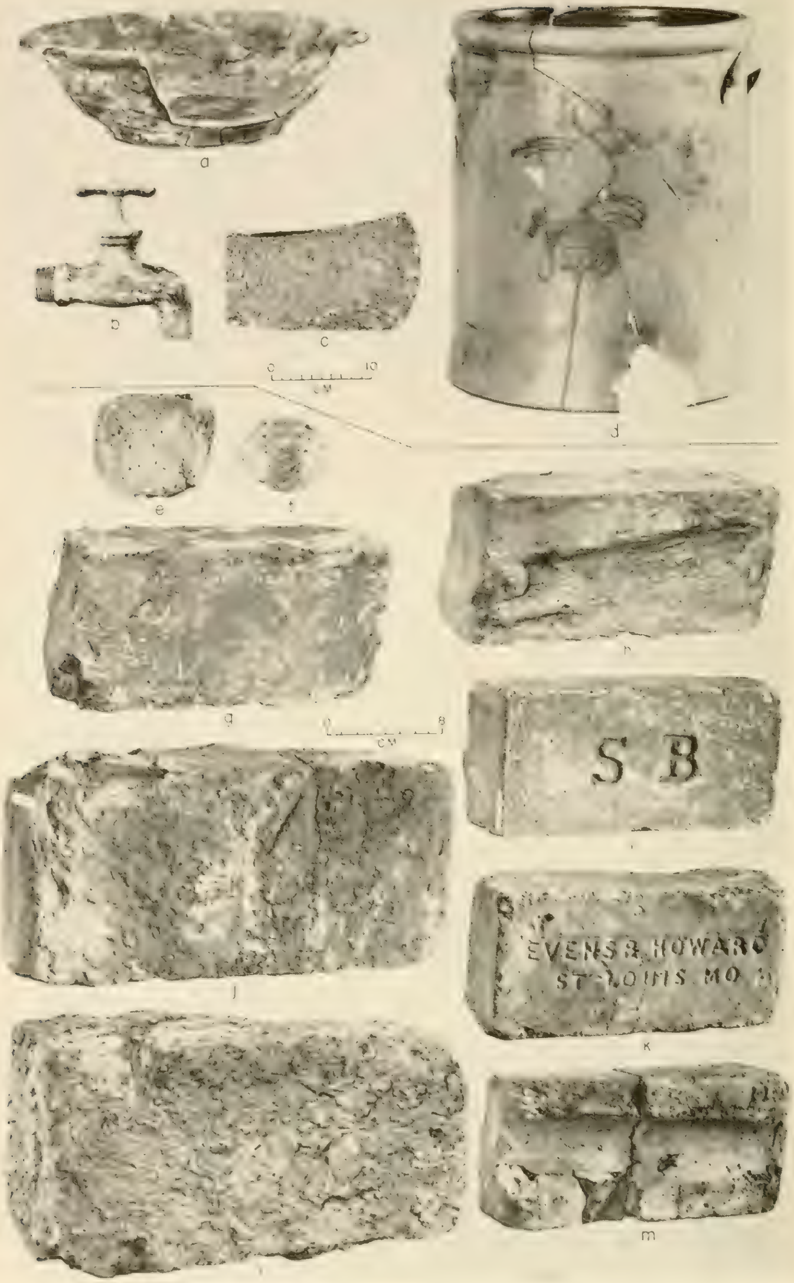
Objects principally representing building hardware and tools.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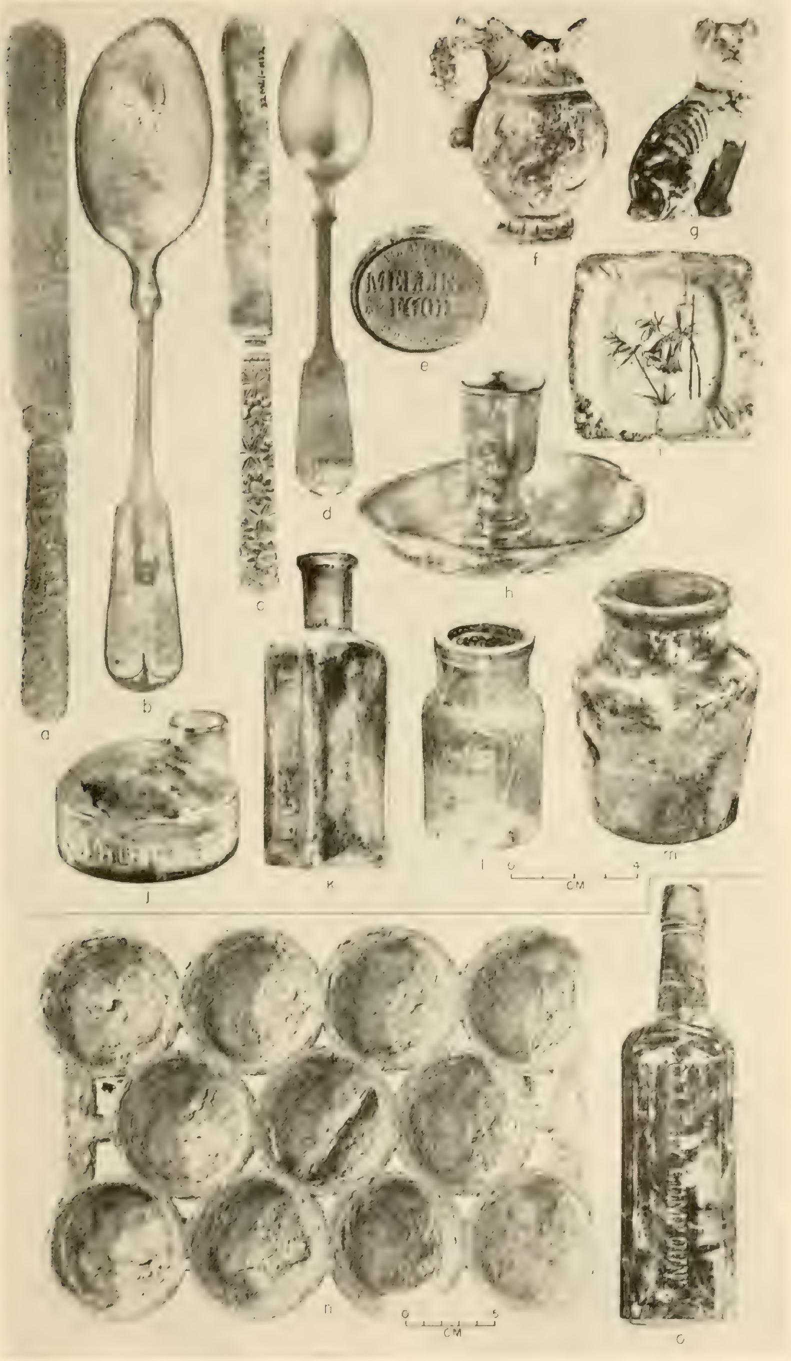
a–d, Domestic furnishings. *e–m*, Adobe bricks and fired bricks.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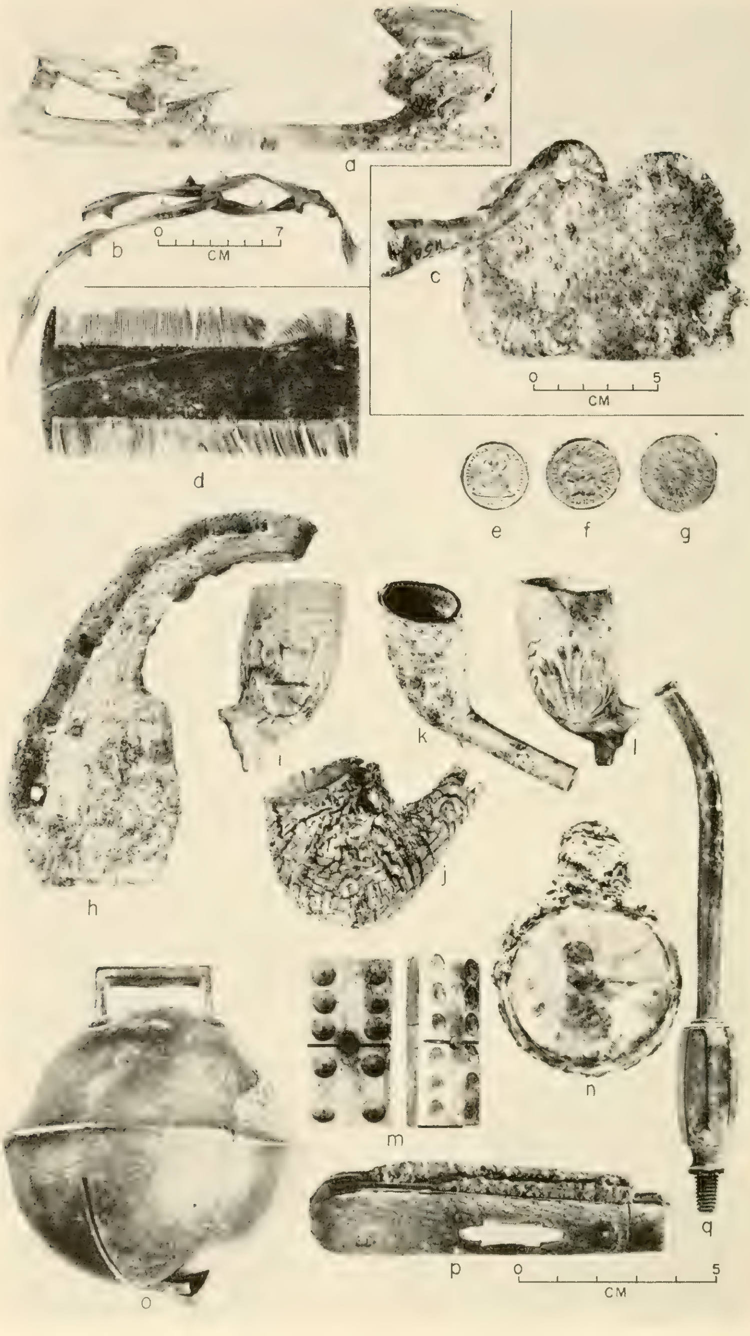
Domestic furnishings.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Personal possessions and agricultural objects.

SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 176

River Basin Surveys Papers, No. 20

The Archeology of a Small Trading Post (Kipp's Post, 32MN1) in the Garrison Reservoir, North Dakota

By ALAN R. WOOLWORTH and W. RAYMOND WOOD

FOREWORD

During July and August of 1954, the writers were in charge of the excavation of site 32MN1, or Kipp's Post, in Mountrail County, N. Dak. The successful conclusion of the excavation and study of the materials found there was brought about by the interest and assistance of many individuals and institutions.

First and foremost, thanks should be given to the Missouri Basin Project, Smithsonian Institution. Dr. Robert L. Stephenson, then acting chief of the Project, gave advice and loaned equipment; G. Hubert Smith, of the same organization, visited the site with the writers, read this manuscript at intervals, and was helpful in many other ways. A map that Smith, George Metcalf, and Lee Madison, of the Project, made in 1951, delimited the post and was of great use during the excavation. In addition to this, the Missouri Basin Project turned over to the State Historical Society of North Dakota notes, photographs, and artifacts found at the site during a preliminary investigation by a field party under G. Hubert Smith. Artifacts collected by the Smithsonian Institution are prefixed by the letters "S.I." in the text.

George Metcalf, Division of Archeology, U.S. National Museum, aided in the identification of artifacts and was helpful at other times. Malcolm Watkins, then associate curator, Division of Ethnology, U.S. National Museum, identified the glazed earthenware. Dr. Carlyle S. Smith, Museum of Natural History, University of Kansas, identified artifacts associated with firearms, and made the reconstruction of the one-pounder cannon found at the site. The Misses Mary Elizabeth King and Irene Emery of the Textile Museum, Washington, D.C., identified the cloth fragments. Dr. Herbert Friedmann, curator, Division of Birds, U.S. National Museum, identified the interesting series of avian remains. Dr. David H. Dunkle, associate curator, Division of Vertebrate Paleontology, U.S. National Museum, identified the fishbones. Dr. T. E. White, Dinosaur National Monument, National Park Service, identified the mammal bones. Miss Lucile M. Kane, curator of manuscripts, Minnesota Historical Society, aided with historical research. Col. Dana Wright, St. John, N. Dak., and Fred La Rocque, New Town, N. Dak., allowed the writers to examine artifacts they had found at the site.

The National Park Service, Region Two, Omaha, Nebr., provided a portion of the funds for the excavation and the writing of this report.

Archeologist Paul Beaubien, of the National Park Service, maintained a steady interest in this report and helped with the artifact identification, as did Marvin F. Kivett, museum director, Nebraska State Historical Society, Lincoln, Nebr. Charles Stewart, the former owner and lessor of the site in 1954, was helpful in any number of ways. Leman Stewart provided a bulldozer on short notice. W. R. Wood drew the maps and "objects of native manufacture."

A hard-working and agreeable crew was provided by Harold Dietz, Fred McEvoy, Richard Giddings, Clifford Chapman, and Fred Morsette. Bernard Weinreich, of Bismarck, ably printed the photographs used in this report.

The faunal remains, artifacts, notes, and photographs from site 32MN1 are on file at the State Historical Society of North Dakota, Bismarck, N. Dak.

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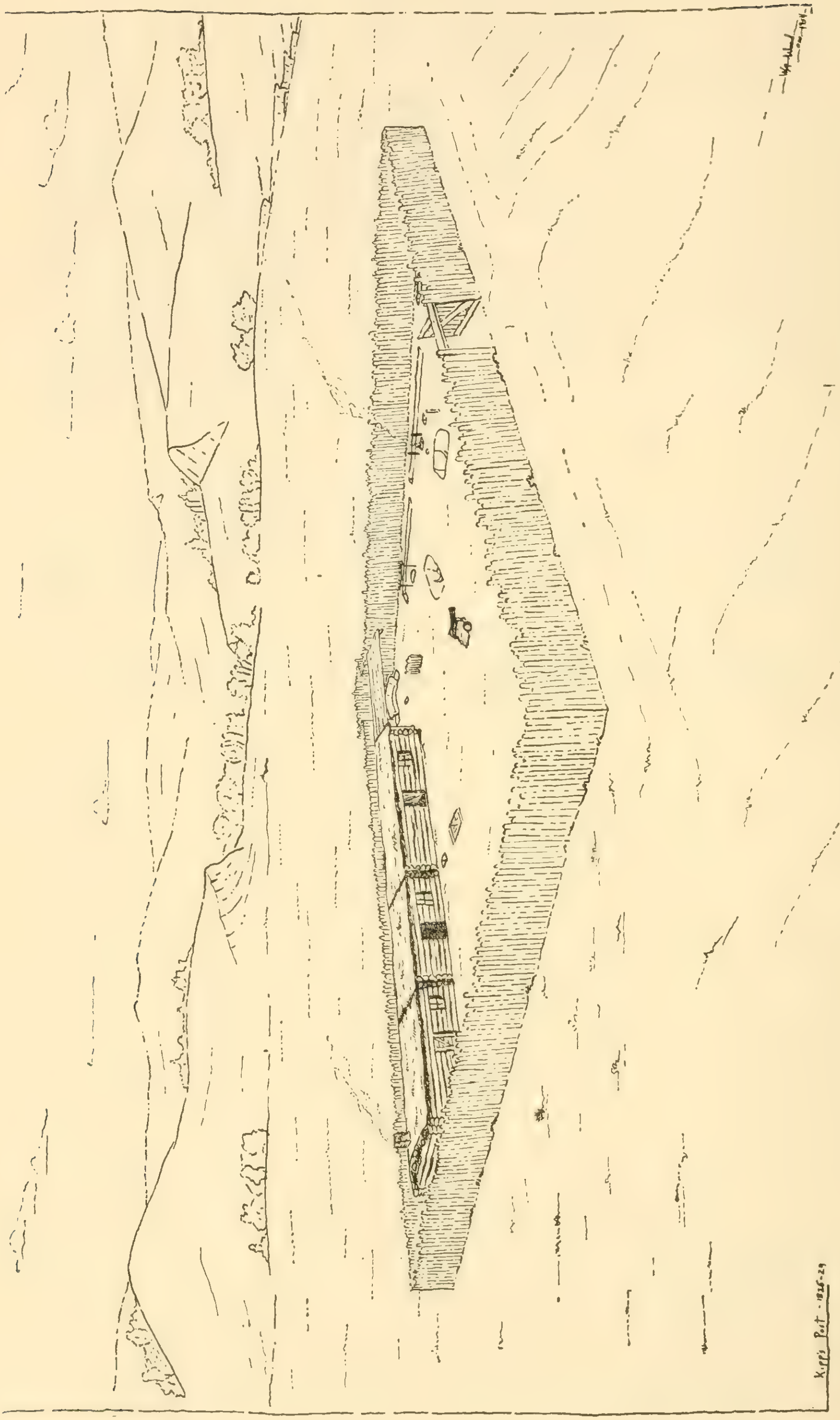
Kipp's Post · 1826-27

FIGURE 21.—A reconstruction of Kipp's Post, ca. 1826–27

THE ARCHEOLOGY OF A SMALL TRADING POST (KIPP'S POST, 32MN1) IN THE GARRISON RESERVOIR, NORTH DAKOTA[1]

By Alan R. Woolworth and W. Raymond Wood

INTRODUCTION

The purpose of this study is to describe the archeological remains recovered from the excavation of 32MN1, the site of a Columbia Fur Company trading post—Kipp's Post—which was apparently built at the mouth of the White Earth River in the fall and winter of 1826–27. Kipp's Post was built before the construction of Fort Clark in 1831, and is the predecessor of the famed Fort Union, built by the American Fur Company near the mouth of the Yellowstone River in 1828. This site was only briefly noted in contemporary literature, and details of its physical appearance and construction were not previously known. The available historical facts are presented in this study, and should provide a background for an understanding of portions of the fur-trading activities of the Upper Missouri River in the late 1820's.

The site is described, archeological fieldwork is summarized, structures are described, and an analysis of the artifacts recovered is presented. The artifacts from the site are especially important, since they relate to an early period of the fur trade in this area and to a time span of only about 5 years. These have therefore been described in considerable detail, and catalog numbers are cited for specific reference. Of special interest are the beads, glazed earthenware, buttons, and clay pipes. A large sample of shale and catlinite pipes was also found.

Also of considerable interest are the two traditions of artifacts found within the trading post. The majority of the artifacts are White object materials as one would expect; nevertheless, about 45 specimens were found that are described as "Objects of native manufacture." The latter are arrowpoints, mauls, whetstones, and a considerable variety of hide-dressing tools.

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[1] Original report submitted to the Region Two office of the National Park Service in March 1957 and accepted in May 1957 by the Regional Director as completing the agreement between the National Park Service and the State Historical Society of North Dakota. Some revision was made in text in November 1958.

Difficulty was encountered in classifying the White object materials. Finally, a functional classification was made. This serves the purpose reasonably well, but as there is a certain amount of overlapping of categories, some cross references were used to compensate for this. "Trade goods" in the main consist of beads, shale, and catlinite pipes, though many of the other White object materials obviously could be in this classification as well.

The site is compared with Forts Berthold I and II, located at Like-A-Fishhook Village, McLean County, N. Dak., since they are the only fur trade posts dating from approximately the same period for which comparable data are available.

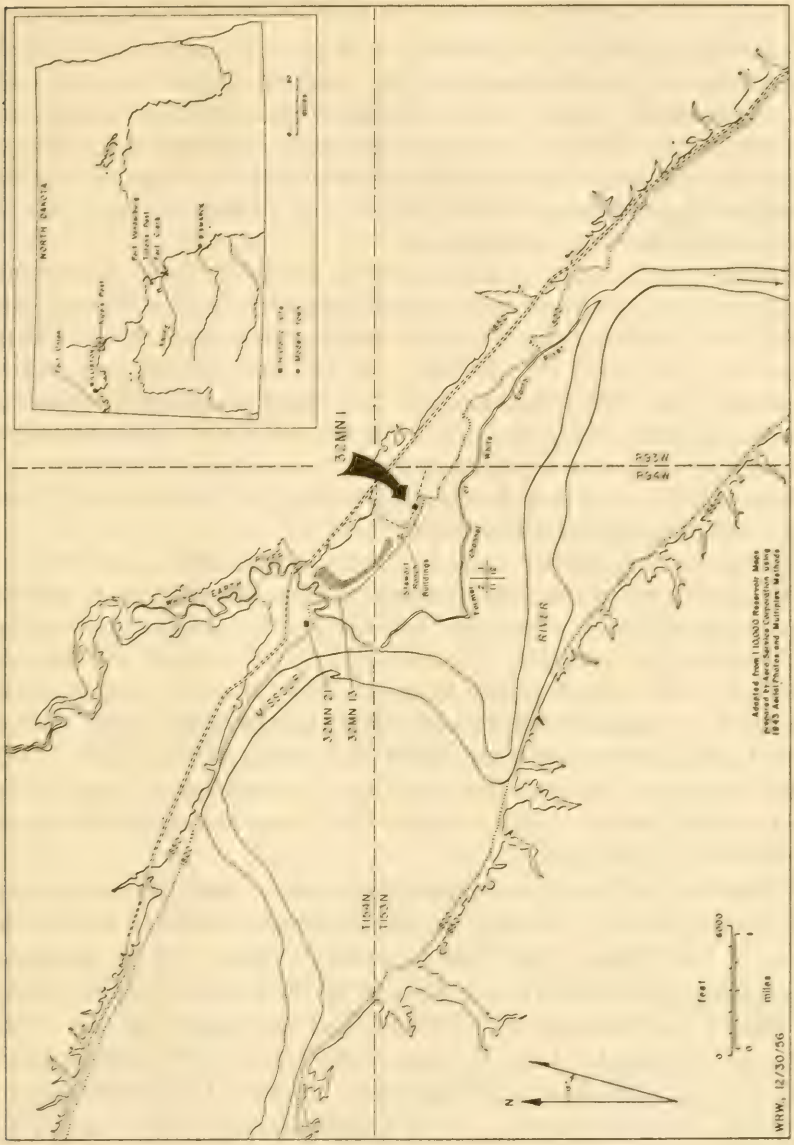
THE SITE DESCRIBED

The site is located in the SW¼NE¼ sec. 1, T. 153 N. R. 94 W., Mountrail County, northwestern North Dakota. It is situated on the north, or left, bank of the Missouri River about 2 miles above the former mouth of the White Earth River. Since 1945 the channel of the White Earth has shifted and the stream now flows into the Missouri River about a mile upstream from the site.

The remains of the post were found on the second terrace of the Missouri River, well above flood stage, and about 300 yards north of what was probably the bank of the White Earth River at the time the post was in operation. The terrace slopes slightly to the southeast, but is otherwise relatively level. The post was built on the edge of the terrace, facing south and overlooking the former channel of the White Earth River, with the Missouri River several hundred yards farther south (map 7).

Before the site was excavated, several features were evident from the surface, although the area had been under cultivation for a few years. Low hummocks were evident on the north and east, and numerous shallow circular depressions were also visible. Occupational debris exposed by cultivation consisted primarily of fired-clay chinking, with some bone scrap and a few artifacts. Some material on the surface definitely postdates the occupation of the fur trade post. Among the modern items found were a 1935 copper-cent piece and fragments of soft-drink bottles.

The site was admirably situated with respect to game and water resources. Game was previously abundant in the area and included bison, deer, antelope, elk, bear, beaver, and numbers of game birds. Some of these animals are represented in the bone found in the site. The river bottoms supported a great amount of timber, among which is cottonwood, ash, boxelder, willow, and diamond willow. Wild plums, chokecherries, and other wild fruits grow along the river bottoms today.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Fort Union
Williston
Kipp's Post
Tilton's Post
Fort Clark
Bismarck
Historic site
Modern town
miles
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R93W
R94W
Stewart Ranch Buildings
Former Channel of White Earth River
WHITE EARTH
MISSOURI
RIVER
32MN 21
32MN 13
T154N
T153N
Adapted from 1:10,000 Reservoir Maps
prepared by Aero Service Corporation using
1943 Aerial Photos and Multiplex Methods
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Map 7.—Map of the area around Kipp's Post with an insert showing its location within the State of North Dakota.

THE HISTORICAL BACKGROUND OF KIPP'S POST

After the purchase of Louisiana in 1803, and the Lewis and Clark Expedition of 1804–6, American fur traders surged into this vast new trade area. Many of the former French-Spanish traders remained in the field to compete with them. Manual Lisa, Pierre Chouteau, and others backed trading ventures that expanded rapidly into the Upper Missouri River region and penetrated well beyond the mouth of the Yellowstone River.

Although little detailed information is available, the evidence indicates that these ventures were largely curtailed by the War of 1812 with Great Britain, and little fur trading was done on the Upper Missouri from about 1812 to 1820. At the time Kipp's Post was in operation (ca. 1826–30), American fur traders were still regaining the ground lost during the hostilities with Britain. The American Government was also trying to undermine the English influence with Indian tribes in northern Louisiana Territory (Chittenden, 1954, vol. 1, pp. 127–128; Wesley, 1935, pp. 155–156).

At this period, the fur trade had not changed much since the days of the 1790's when the French-Spanish of Louisiana sought mainly the smaller choice furs such as beaver and otter that were not bulky and were highly valuable. The late 1820's and early 1830's brought changes to this region as the American Fur Company bought out or swamped its competitors and established permanent posts such as Fort Clark, a short distance below the mouth of the Knife River, which remained in operation until the fur trade was virtually extinct in the 1860's. Great changes also came about for the native populations of this area.

Weakened by diseases and liquor, they became more dependent upon the fur-trade posts. Former luxuries became necessities, and the decline of the village tribes was especially evident. With improved transportation facilities brought about by the advent of the steamboat on the Upper Missouri in the 1830's, and the drastic decline in the value of that staple of the fur trade—the beaver pelt—buffalo hides, tongues, and pemmican, and deer hides supported the declining fur industry. All of this was not yet evident during the heyday of the Columbia Fur Company on the Upper Missouri, but grew more apparent within 10 years after their amalgamation with the American Fur Company in 1827.

THE COLUMBIA FUR COMPANY

The Columbia Fur Company was organized in late 1821 or early 1822, probably as a result of the merger of the Hudson's Bay Company and the Northwest Company of Montreal, which threw many experienced employees out of work. Chittenden (1954, vol. 1, p. 323) credits Joseph Renville, a former British trader, with forming this new organization. Among the founders were William Laidlaw and Kenneth McKenzie. One writer states that McKenzie was the director of this company, but since he was not yet an American citizen, he remained behind the scenes (Abel, 1932, p. 336). American citizens, such as J. P. Tilton, gave the new enterprise the necessary legal status to comply with American laws. The legal title of the company was Tilton and Company, but it was commonly known as the Columbia Fur Company (Porter, 1931, vol. 2, p. 745). It is not definitely known whether this name was used as an indication of the ambitious plans of the concern; it could also have been an attempt to hide behind a patriotic name.

The principal establishment of the new firm was on Lake Traverse, near the divide of the Red River of the North and the Minnesota or St. Peter's River. Posts were also established at Prairie du Chien on the Mississippi and at Green Bay on the western shore of Lake Michigan although the more important establishments appear to have been on the Missouri River. Most important of this company's posts on the Missouri was Fort Tecumseh, located a little above the mouth of the Teton (Bad) River in present South Dakota. Farther downstream was Fort Lookout and other posts were located south to Council Bluffs (Chittenden, 1954, vol. 1, pp. 324–325; vol. 2, p. 965).

The American Fur Company had competing posts in association with those of the Columbia Fur Company all along the Missouri River, but none were so high as the mouth of the Knife River and the Mandan–Hidatsa trade.

The capital of the Columbia Fur Company, according to Chittenden (1954, vol. 1, p. 324), was not large, "but the partners were all bold, experienced, and enterprising men." By 1826, the Columbia Fur Company was in a good position. They were well entrenched and too able a group of men for competition to easily suppress them. The American Fur Company was well aware that it had to rid itself of this dangerous competition.

Negotiations for a union of the two companies were begun in 1826, and in July of 1827, the merger took place. Under its terms, the Columbia Fur Company withdrew from the Great Lakes region and the upper Mississippi. On the Missouri River, a subdepartment of the American Fur Company was created which comprised all of the region above the mouth of the Big Sioux River. The Columbia Fur Company took charge of this department with little change of their former organization. The former partners in it were made partners or proprietors in this subdepartment. McKenzie, Laidlaw, Lamont, and others, such as James Kipp, remained prominent in what became the Upper Missouri Outfit of the American Fur Company (ibid., pp. 324–326).

The following data concerning the Columbia Fur Company's operations near the mouth of the Knife River are largely abstracted from Wied-Neuwied (1906, vol. 23, pp. 223–228), who apparently collected them from James Kipp at Fort Clark in 1834.

James Kipp, a Canadian of German descent, came to the Mandan and Hidatsa country in 1822 as an agent of the Columbia Fur Company. At that time, Joshua Pilcher of the Missouri Fur Company operated a trading post (Fort Vanderburgh) a little above the Hidatsa villages on the Knife River which was abandoned in the spring of 1823. In May of 1823, Kipp began building a fort in the prairie between the later Fort Clark and the site of a winter village of the Mandan inhabitants of Mih-Tutta-Hang-Kush. By November of that year, he had the post completed. This is the nebulous Tilton's Post, of which little is known.

It was in that year that prolonged hostilities between the Arikara tribe and the Americans began. After the Arikara surprise attack on General Ashley's keel boats, a few miles above the mouth of the Grand River in early June of 1823, Col. Henry Leavenworth retaliated ineffectively with an attack on the Arikara villages. Thereafter, the unawed Arikara killed every white man who came their way and removed themselves to the vicinity of the Mandan villages near the Knife River and the short-lived Tilton's Post.

The personnel of Tilton's Post consisted of Tilton, Kipp, and four other men. They were in constant danger of attack from the neighboring Arikara. Indeed, one of the Columbia Fur Company's employees was killed at the entrance of Tilton's Post by an Arikara chief, Stanapat (The little hawk with the bloody hand). Other white people on the Missouri River were also murdered. Neither Tilton nor Kipp, nor any other employees, dared venture out of the fort during the whole of the autumn of 1823. Tilton moved to a nearby Mandan village and remained there until the fort was completed in November.

Although the Mandan were friendly with the Arikara, they were aroused by the death of the Columbia Fur Company employee at the entrance to the post and wished to make war on the Arikara. Tilton dissuaded the Mandan from this course of action as he feared the Arikara would then cause serious trouble with the transportation of supplies from the Company's post on Lake Traverse to the Mandan post.

In early December of 1823, William Laidlaw, a partner in the company, came from Lake Traverse to the Mandan post with six wagons of trade goods. The Arikara now made a tenuous peace with the personnel of Tilton's Post, as they could not get supplies from any other source. Difficulties with the Arikara continued, however, and Tilton removed to a Mandan village where the chief, Tohp-Ka-Sinka (the four men) protected him. Afterward, probably in the spring of 1824, Tilton went downstream to St. Louis.

In the spring of 1824, the Arikara returned to their former villages above the mouth of the Grand River stating that they would live in peace thereafter with the white man. Kipp remained alone at the Mandan village and did not see another white man through the entire summer of 1824. About this time, Tilton's Post was abandoned and Kipp built a house near the Mandan village and dwelt there. During the summer of 1824, Kipp had the palisades of Tilton's Post cut down close to the ground and the Mandans floated much of the timber downstream to their village where Kipp added a number of rooms to his quarters and built a palisade around them. Probably in this same year, a company employee named Jeffers came with seven men and wagons of trade goods from the headquarters on Lake Traverse.

The year 1825 seems to have been a busy one at the Mandan post. Kipp was short of trade goods and sent Touissant Charbonneau, now a company employee, to Lake Traverse after supplies. On his return, Charbonneau fell in with a group of Assiniboin and lost the entire outfit. About this time, members of the Crow tribe arrived to trade, but as Kipp was short of trade goods, he took two halfbreeds with him to Lake Traverse where they obtained a supply and returned with a wagon safely. During this same summer, while Kipp was absent on the trip to Lake Traverse, Gen. Henry Atkinson visited the Mandan villages en route on the well-known Yellowstone or Atkinson-O'Fallon Expedition. Accompanying Atkinson were employees of the "French Fur Company" or the P. D. Papin Company. The trader Bissonette was with them.

In the autumn of 1825, Tilton arrived from St. Louis with a keel boat laden with trade goods. Kipp had in the meantime sent invitations to the Assiniboin, Cree, and Ojibwa tribes to come to the Mandan villages and trade with him. A subagent for the Mandan named Peter Wilson was at the Mandan Post with Kipp. Peace was then made between these tribes, the Mandan, and Whites. The object of this maneuver was to break off the northern tribes connection with the English and to draw their trade to the Missouri River.

In April of 1826, Tilton and Wilson went to St. Louis, and Kipp remained at the post with five men. Tilton returned in November with trade goods and, according to Maximilian, Kipp went to the mouth of the White Earth River and erected Kipp's Post.

Maximilian makes the basic reference to this venture as follows (Wied-Neuwied, 1906, vol. 23, p. 228):

> In April of 1825 [1826] Messrs. Wilson and Tilton returned to St. Louis, and Kipp alone remained at the Mandan Post, with five men. In November, Mr. Tilton returned with a supply of goods, and Mr. Kipp went to White Earth

> River, carrying with him a fine selection. Here he built a fort, a little on this side of the mouth of the river, and remained there during the winter, trading with the Assiniboins.

Thwaites states in a footnote that the date of April 1825 should actually be April 1826. To judge from the known date of the Atkinson-O'Fallon Expedition, Maximilian was one year behind in his dates (ibid., p. 228). In passing the mouth of the White Earth River in 1833, Maximilian (ibid, p. 214) made another brief mention of Kipp's Post: "At this spot there was, formerly, a fort, which was abandoned in 1829, when Fort Union was built."

Another interesting though confusing reference to Kipp's Post was made in Larpenteur's Journal (Larpenteur, 1898, vol. 1, p. 108):

> . . . About the year 1827 an outfit was made up and started for the mouth of the Yellowstone, Mr. McKenzie in charge. They did not reach that far the first year, but established a wintering post at the mouth of White river, halfway between Forts Union and Berthold—say 150 miles below the Yellowstone. After the post was finished Mr. McKenzie started for the States, and Mr. Honore' Picotte remained in charge. The returns were found encouraging and in the following year he went on to the mouth of the Yellowstone, where the chief of the band of the Rocks [Assiniboin] had desired him to build.

Presumably Larpenteur was given this information by Kenneth McKenzie, but no mention of James Kipp is made at all. These data indicate that the establishment at the White Earth River was intended only as a wintering post and perhaps as a stopover en route to the mouth of the Yellowstone River where a more permanent post was to be established for trade with the Assiniboin and other tribes in that region who had been previously dependent upon British traders for supplies.

The only other contemporary documentation available concerning Kipp's Post is a brief note concerning the "Second Journey Of Prince Paul" (the Duke of Württemberg) up the Missouri River in 1830, as cited by Bauser (1938, vol. 19, p. 472):

> "February. To the Council Bluffs. Fort Atkinson. Visits the Mandan Indians. Fort Kipp."

Perhaps this evidence indicates that Kipp's Post was still operating. It could well be that it continued in use until Fort Union was well established and was then burned to prevent a competing company from using it.

The Southern Assiniboin chief, Red Stone, told Edward S. Hall about Kipp's Post in 1882 or 1883. He stated that at the time the post was occupied, boats landed very near the post (Breeling, 1954).

Other references to Kipp's Post are scanty, and apparently most of these either are based on Maximilian or duplicate data given by him. Until its excavation, Kipp's Post was one of the least-known posts of the Columbia Fur Company and the American Fur Company.

It is the present writers' opinion that McKenzie, Kipp, and other employees of the Columbia Fur Company started for the mouth of the Yellowstone River in November of 1826, with a supply of trade goods for the Assiniboin tribe and with intentions to build a trading post at the mouth of the Yellowstone River. Halted by winter, a wintering house was built at the mouth of the White Earth River for trade with the Assiniboin and as an advance base for the construction of a post on the mouth of the Yellowstone River. Why else would McKenzie, the reputed head of the firm, accompany an experienced trader (Kipp) to a mere wintering establishment? It is quite conceivable also that when the Assiniboin and other northern Indians came to the Mandan villages in the fall of 1825, they were promised a trading post in their territory. Certainly Larpenteur's statement quoted above indicates this to be fact. Promises of some sort must have been made to these Indians or they would have continued to trade with the British.

In July of 1827, the Columbia Fur Company merged with the American Fur Company. In October of 1828, Kenneth McKenzie wrote that a fort at the mouth of the Yellowstone was under construction (Chittenden, 1954, vol. 1, p. 958). If the merger with the American Fur Company had not taken place, it is quite possible that the Columbia Fur Company, encouraged by the returns from Kipp's Post, would have erected its own establishment at that location. With Fort Union well established, Kipp's Post became less important and was abandoned in 1829 or 1830.

ARCHEOLOGICAL FIELDWORK

The site was known from traditional information for years prior to 1938 when Thad C. Hecker located and mapped the visible features (Hecker, MS.). A brief note on the site (Will and Hecker, 1944, p. 84) has been published, but not until 1951 were systematic efforts made to obtain further data on the site.

In that year a River Basin Surveys field party under the direction of G. Hubert Smith obtained permission to carry out test excavations at the site. At this time, Smith's party located the palisade trench and recovered some artifacts. A valuable sketch map of the site was made, as were photographs and notes. With this information at hand, the State Historical Society of North Dakota commenced excavation in July 1954.

The excavation of the site proceeded as follows. The location of the post was determined with the use of Smith's notes; then the outline of the palisade trench was exposed by means of test pits. The sod was then stripped from an area extending about 10 feet outside the perimeter of the palisade trench. At this time the site was photographed and a contour map prepared showing the elevations, depressions, and other surface features. The majority of the disturbed earth in the plow zone was then removed by hand and with the use of a bulldozer. After this, the area within the palisade was excavated to sterile soil. The pits and other features were then mapped, and a plane table map of the site was prepared (fig. 22). Photographs of individual features were taken before and after excavation, and several general views were secured after the site was completely excavated (pls. 55, 56, 57).

Previous workers suggested the possibility of earth-lodge depressions adjacent to the post, and some time was devoted to stripping and testing the areas where these depressions were reported. No evidence of any structures was found in the depressions investigated, nor were structures of any form evident outside the palisade trench.

ARCHEOLOGY OF THE SITE

STRUCTURES

THE STOCKADE TRENCH

The stockade or palisade trench that formed the quadrilateral enclosure of the post averaged 96 feet on a side, and was oriented approximately with respect to magnetic north. A rectangular bastion projected about 5 feet beyond the northeastern corner of the enclosure; within this feature was a large irregular pit (Feature 12). The southwestern corner of the post revealed no similar defensive structure, but fired-clay chinking was found vertically between the post butts for a distance of 8 feet along the western trench and for 18 feet along the southern trench from this corner. This may represent a shed inside the stockade or another defensive feature. This area is designated by the letters "a" and "b" on the plan of the site (fig. 22).

The stockade trench had an overall length, including the bastion, of 395 feet. It contained the remains of approximately 673 cottonwood posts. The majority of these posts were indicated by soft earth, wood ash, and bark, as the wood had usually decayed except on the western portion of the enclosure where some posts were preserved as charred butts by burning (pl. 57, *c*).

Most post butts were bady rotted, but enough of them remained so that an accurate estimate of the number in the stockade wall could be made. Each discernible post was plotted on the site map. In most instances the posts had been placed close together in the stockade trench. In a few cases, slender or crooked posts probably had others placed behind them on the inner side of the trench. It is also possible that posts occasionally rotted out in the stockade line and that the double rows of post butts resulted from replacements, though the trading post apparently was not inhabited for more than about a 5-year period. In a few instances, the rotted post butts had ovate cross sections, indicating that they had been split before being placed in the trench. No hewn post butts were found and the bark had been left on most of them.

The posts used in forming the stockade ranged in diameter from about 0.3 to 0.8 foot with the average diameter about 0.5 foot. No information exists about the height of these posts though the completed palisade was probably at least 8 feet in height and may have been considerably more. No evidence was found to suggest that the top of the palisade was even or reinforced with a plate.

Four cross sections (Features 56, 57, 58, and 59) were made of the stockade trench. It ranged in width from 1.3 to 2.7 feet and was 1.3 to 1.8 feet in depth. This trench was somewhat irregular and varied in width from point to point (pl. 57, *d*).

THE ENTRANCE

The entrance consisted of a break in the southern stockade trench line, which was 9.5 feet across and faced the White Earth River. Posts 0.5 foot in diameter were found on either side of the entrance, within the stockade trench. These posts may have served to support a swinging 2-piece gate. Two other posts (Features 31 and 33), were found about 5 feet on either side of the entrance and on the inner side of the stockade trench. These probably served to hold the sections of the gate open. The entrance was oriented to the south and apparently faced the river channel at the time the post was built. Fort Berthold I, at Like-A-Fishhook Village (32ML2), was oriented in a similar manner.

THE BASTION

The bastion or blockhouse (Feature 2) was a rectangular extension of the palisade or stockade trench in the northeastern corner of the enclosure. It projected about 5 feet outward from the stockade trench and was a continuation of this trench. This projection had two faces and two flanks, thus affording enfilade fire along the north and east walls of the post. Only one bastion or blockhouse was found at this post, although two blockhouses, placed at opposite corners of the enclosure, occur at most fur trade posts of this area. The available evidence suggests that this defensive structure was merely an extension of the general palisade and thus did not have a superstructure as was common in the elaborate blockhouses at some fur trade posts. A large, irregular pit (F–12) in the center of the bastion contained charred refuse.

THE BUILDINGS

Definite remains of buildings were noted only along the northern side of the enclosure. These remains consisted of fired-clay chinking showing the impressions of round logs, cabin sills with chinking around them, floor joists, charred puncheon flooring, and post molds. Four buildings are apparently represented by these remains.

The most significant evidences of these structures were six cabin sills surrounded by chinking, and nine floor joists which were oriented north-south. They varied in length from 4 to 17 feet and in width from 0.3 to 0.5 foot, and were set into the ground about 0.2 foot. Cultivation had obviously destroyed portions of these sills and joists although the majority of them were about 16 feet long. This area was designated as Feature 3 during excavation (pl. 56, *a*).

The cabin sills were distinguished from the floor joists by being surrounded by fired-clay chinking. They also enclosed three rectangular areas (Features 62, 63, and 64). In each case, these log cabins had similar measurements and were separated from each other by about 2 feet. Charred flooring was found in all three cabins, though the majority of it was found in the western and central structures. Iron nails found associated with the flooring suggest that it was nailed to the floor joists.

Feature 62 was located in the northwestern corner of the enclosure. It measured 18.3 feet east and west and 18.0 feet north and south. Between the charred sills were three joists which once supported the floor of hewn cottonwood puncheons. Portions of this cottonwood flooring were found lying upon the joists. Some of it retained bark on the under side although the majority of the floor was apparently hewn on both sides. The flooring was poorly preserved since plowing had disturbed much of it. It was consequently in various lengths and about 0.4 foot wide and 0.1 foot thick.

This cabin probably served as a kitchen since considerable quantities of animal and bird bone were recovered here. Fragments of glazed earthenwares, melted lead, and lead balls were found here. Feature 20, an extensive trench filled with trash, was partially between this cabin and the palisade trench. It contained large quantities of ash, burned bone, and other refuse and probably was a kitchen refuse area.

This cabin also contained a fireplace (F–24) which was associated with four small post butts. These post butts were placed in a pattern around the basin-shaped fireplace. The basin-shaped fireplace was 3 feet in diameter and 0.5 foot deep. Large quantities of fired-clay chinking were found around the fireplace. This suggests that the original feature was a clay-chinked stick chimney.

Feature 63, the central log cabin, was 18 feet east and west and 16.5 feet north and south. Between the two charred and chinked sills were three floor joists which supported the floor of cottonwood slabs. The flooring consisted of hewn slabs similar to those in the cabin discussed previously.

Features found here include a pit (F–14) and a possible fireplace (F–16). The pit was in the western portion of the cabin and was oriented east and west. It contained an earth septum that divided the bottom of the pit into two parts. One of the floor joists of this cabin passed directly over the septum. This pit was 2.2 feet deep, 4.1 feet wide, and 7.0 feet long. It was apparently open at the time the cabin above it burned, since charred flooring collapsed into it. This feature contained a number of assorted trade beads, a plain finger ring without a setting, clay pipe fragments, two pieces of a leather shoe heel, glass fragments, animal bones, iron nails, a burned human incisor, and plum (?) stones. This pit was probably originally for the storage of trade items and food, and later for refuse.

One possible fireplace (F–16) was in the western portion of this cabin. It was badly disturbed by rodent burrows so that its identification is uncertain. It was about 2.5 feet in diameter and consisted of ash and some burned earth scattered through a series of rodent burrows. If it was originally a fireplace, it predates the period when flooring was laid in this cabin, since it was beneath the board flooring.

It seems probable that this cabin was used as a dwelling although definite evidence is lacking.

Feature 64, the easternmost cabin in this series, measured 19.3 feet east and west and 17.5 feet north and south. It also had three floor joists laid parallel to the sills. No pits, fireplaces, or other significant finds were made in this structure. The absence of a fireplace in this building would tend to suggest that it was not used as living quarters, but for the storage of trade goods and furs, and possibly food in wintertime.

Evidence of a fourth structure (F–65) was east of the last log cabin in this range of buildings. This feature does not appear to have been a log cabin. Chinking was absent in this area, and sills and floor joists were lacking. This building was not well defined, probably because cultivation had gone deeper in this portion of the enclosure. It is thought that this unit might have been a pole shed that occupied the area between Feature 64 and the eastern stockade wall.

At the western end of this structure were three large post butts (Features 46, 47 and 48) in square post molds. The tops of these cottonwood logs were burned; the bases were sawed square. They were placed in a line about 5 feet apart. It seems probable that these posts were about 8 or 10 feet in height and supported a joist or rafter that in turn supported a pole roof.

No evidence was found of internal support posts near the center of this shed. Nevertheless, it is possible that posts of this nature were set on the ground and not in postholes.

Evidence which supports the existence of a shed at this location were the indications of 14 logs or poles which were found oriented in an east and west direction on the ground at this spot. Only one of the poles consisted of charred wood. The remainder were found as bands of burned earth and fine charcoal in the soil. These poles were probably from the roof.

Feature 50, a pit measuring 2 feet north and south and 1.4 feet east and west, and 1 foot in depth, was in the east central portion of this shed. The pit fill was clay; it contained six lead rifle balls. No suggestion can be made as to its function.

Little can be said about the function of this building although it may have housed horses, tools, and perhaps a boat. It might have also been a convenient latrine in the winter.

The available evidence suggests that this structure was a shed with a flat roof that sloped forward toward the post enclosure. It probably had an open front and abutted against the eastern palisade wall and easternmost log cabin, Feature 64. The rear of this shed presumably was composed of logs, though it could have abutted against the northern palisade wall. This building was about 30 feet east and west and 18 feet north and south.

A few speculations about the buildings are in order. First, it is of interest to point out that the structures at Kipp's Post were placed in a fashion similar to those at Forts Berthold I and II located at Like-A-Fishhook Village. In these two fur trading posts, the living quarters were placed against the northern stockade or palisade walls.

This method of placement had a major advantage in providing protection from the northwesterly winds which accompany the winter in this region. It also afforded sunshine on the cabin fronts during the year and especially during the winter months. Furthermore, it meant that the living quarters faced the entrance to the post.

There is some question as to whether the log cabins were units of a larger building, which was divided by chinked log partitions, or three separate log cabins were located here. It seems almost certain that the chinked sills delimited three separate log cabins, as these sills were separated by about 1.5 feet at the two points where the cabins adjoined each other.

When this area was excavated, a layer of fine, compact, light-colored clay was found beneath the flooring. Around the joists and sills and particularly between the slabs, quantities of glass beads, rifle balls, lead shot, and other small artifacts were found. The layer of fine clay hints that the cabins were in use for sometime before flooring was put down over the clay. This would account for some of the material found within the clay.

The presence of small amounts of thin window glass suggests that some of these cabins had small windows which probably faced south. Other artifacts, including an iron hasp, an iron pintle or door hanger (?), an iron door hook, iron nails, and quantities of clay chinking, give a few more clues to the construction of these cabins.

The westernmost cabin was apparently a kitchen and probably also served as a living area since clay pipe fragments and a considerable amount of melted lead was recovered here. The central cabin presumably served as living quarters at one time. The storage pit (F–14) and the probable fireplace (F–16) indicate this, although these features were probably used before the cottonwood flooring was laid down. The third and easternmost cabin in this range of buildings may have been used for storage of trade goods and supplies as well as furs, although direct evidence is lacking.

No evidence exists to indicate the type of roof used in these structures, but fur trade posts of a somewhat later date ordinarily had flattened gabled roofs of poles or slabs covered with dirt and sod. It might be well assumed that this type of roof was in use at Kipp's Post. It is also possible that each building had its own roof rather than a continuous one for the series of log cabins.

A number of features have an obvious relationship with the three log cabins and the shed. These are briefly discussed here to show their relationships to the buildings, but will be dealt with in more detail in the appropriate sections of this report.

Feature 22, a trench 10 feet in length, was located at the southwestern corner of the westernmost log cabin (F–62). This trench contained a series of small post butts, and apparently originally consisted of a post screen which could have served as a windbreak near this cabin. Nearby were two small basin-shaped pits (Features 18 and 23) that were probably used for smoke tanning of hides.

Feature 8, a pit 2.8 feet square, was in front of the middle and eastern cabins. It contained a number of small artifacts and had served as a refuse pit.

Feature 51 consisted of a small trench about 4 feet in length. It was located at right angles to the front of the shed (F–65) and probably once supported a few small posts. It could well have served as a hitching rack for horses.

A long trench (F–20) was between the western and middle cabins and the northern stockade wall. This trench was 24 feet in length and averaged about 2 feet in depth. It had obviously served as a refuse disposal pit, since it contained quantities of kitchen refuse. It could also have been used as a latrine.

Between the shed (F–65) and within the bastion was a large irregular pit (F–12). It contained such refuse as broken animal bones, fragments of chinking and charcoal. This feature obviously served as a refuse disposal area and may have also been a latrine.

FIREPLACES

Five fireplaces (Features 11, 16, 19, 24 and 39) were found; all of them were circular, averaging about 2.5 feet in diameter. They contained white wood ash, charcoal, and artifacts, and were underlain by red burned earth. One of the fireplaces (F–24) is in the presumed kitchen (F–62), and is associated with four small postholes. These posts were placed in a pattern around the fireplace. Large quantities of fired-clay chinking were found in this area before and during excavation, and the fireplace in question may have had a clay-chinked stick chimney.

One possible fireplace (F–16) was in the western portion of F–63, the central cabin. It was badly disturbed by rodent burrows; hence the identification is uncertain. This presumed fireplace consisted of ash and some burned earth scattered through a series of rodent holes. It was located beneath the cabin flooring and probably predates it.

Three outside fireplaces were found. Two of them (F–11 and F–19) were on the eastern side of the post enclosure. Both were associated with small post molds. These post molds are probably the remains of forked pole structures that once supported kettles and other containers over the fireplaces. Feature 19 was apparently associated with rifle-ball casting, as scattered droplets of lead were found near it and in the adjacent Feature 9, a small pit. Another fireplace (F–39) was in the southwestern portion of the enclosure. Most of it was removed while bulldozing the overburden from this area.

CHARCOAL-FILLED PITS AND DEPRESSIONS

Eight small pits and depressions (Features 18, 23, 25, 26, 27, 34, 37, and 45) were found around the walls of the post enclosure. All of them contained charcoal. A few of them had bits of charred bark at their bottoms. Six of these (Features 18, 23, 25, 26, 27, and 37) were circular shallow depressions. They ranged in diameter from 0.7 to 1.3 feet, and from 0.1 to 0.3 foot in depth (pl. 57, *a*).

The other two features in this series (F–34 and F–45) were deeper circular pits. These varied considerably in form and content and will be described individually.

Feature 34 was 1.5 feet in diameter, and 1.0 foot in depth. The upper portion of this pit was filled with clay, and the lower 0.2 foot consisted of charcoal.

Feature 45 was a basin-shaped pit 1.4 feet in diameter and 0.6 foot in depth. The upper portion was filled with a mixture of burned earth and charcoal. The bottom was filled with ash and charcoal, including a large granite boulder.

These features, though varying somewhat in form, each had charcoal in their bases. Seemingly, they all may have served a similar function. It is thought that they were used for the smoke tanning of hides. Smiliar pits, but filled with charred corncobs, have been found at Like-A-Fishhook Village (32ML2). This technique of hide tanning is reported for the Hidatsa (Hoffman, 1906, p. 456), and was probably present among the Mandan. Archeological evidence (Wood, MS. p. 51) indicates that it was practiced by the Arikara.

LARGE TRENCHES

Five large trenches (Features 12, 17, 20, 21, and 55) were within the post enclosure; these were parallel to the eastern and northern stockade walls. They were generally long, narrow, shallow trenches and contained few artifacts.

A large, irregular pit (F–12) was inside the bastion in the northeast corner of the enclosure. The walls of this pit were steep, and curved sharply to a nearly flat bottom. The pit had a maximum depth of 1.4 feet. A western extension of the pit was trenchlike in appearance, and was narrow and elongated. It sloped gradually to the surface at its westernmost extremity. The pit was filled with burned earth and charred refuse. Though this pit may have originally had some function in connection with the bastion, its final use was that of containing refuse. It was located in an out-of-the-way part of the post enclosure, and if it were not necessary for the defense of the trading post, would have provided an adequate refuse disposal area.

Feature 20, on the northern side of the enclosure, was located between the cabins, Features 62 and 63, and the northern stockade trench. It was 24 feet long and 2 feet wide. Its depth varied from 2 to 2.5 feet. The eastern portion of this trench was undercut considerably and expanded to about 4.5 feet in width; the bottom was also deepened. This feature was filled with what appeared to be kitchen refuse and ash. Many broken and burned animal bones were recovered here, as well as clay pipe fragments, window-glass fragments, and portions of a small cast-iron cannon.

Three approximately rectangular trenches (Features 17, 21, and 55) were on the eastern side of the enclosure and parallel to the stockade trench. They were shallow, averaging 0.8 foot deep, 1.7

feet wide, and ranged in length from 11 to 22.5 feet. The northern end of the northernmost trench, Feature 21, made a short right-angle turn to the west. These three trenches were nearly devoid of artifacts or other remains, although Feature 21 contained clay-pipe fragments and a portion of an inlaid catlinite pipe bowl. A few pieces of animal bone were found in each of the trenches. Few inferences can be made as to their function though it is just possible that these three shallow trenches represent the start of a series of buildings or enclosures that were never completed. They definitely were not latrine trenches, though their forms and locations indicated this. It is possible that they had served as borrow pits, perhaps even provided earth for the cabin roofs.

SMALL TRENCHES

Two small curtain trenches extended into the post enclosure from the palisade line, at right angles. One of these, Feature 53, was in the southeastern corner of the enclosure and contained eight cottonwood posts 0.4 foot in diameter. This feature was 4.7 feet long, 0.7 foot wide, and 1.2 feet deep. It seems possible that a wall of posts was erected here to serve as an enclosure and shelter for a horse corral.

Feature 54 was situated on the western side of the enclosure. It consisted of a trench that was 3.6 feet long, 0.7 to 0.8 foot wide, and 1 foot deep. No evidence of posts was found and the function of this feature is unknown.

Two small trenches (F–22 and F–51), oriented north and south, were south of the buildings on the north side of the enclosure. Feature 22 was 10.2 feet long, 0.7 foot wide, and 1.4 feet deep. It contained three cottonwood posts 0.4 foot in diameter and may have served as a screen for the western cabin, Feature 62. Associated with it were two shallow pits (F–18 and F–23) which had probably been used for the smoke tanning of hides.

Feature 51 was located immediately in front of the middle of the shed, Feature 65. This small trench was 3.8 feet long, 0.5 foot wide, and 1.6 feet deep. Wood dust found in the fill suggested that posts had been in the trench at one time. The location of this feature suggests that it was perhaps once used as a hitching rack for horses that were kept in the adjacent shed (F–65).

LARGE PITS

Eight large pits (Features 4, 6, 7, 13, 14, 15, 60, and 61) were found within the post enclosure; five of them were grouped around the front of the range of buildings in the northern half of the enclosure. Five of these pits (Features 4, 6, 7, 13, and 15) were oriented north and south. Two of the remaining pits, Features 60 and 61, were oriented in an east and west direction. Feature 14, the only one found within a structure (F–63), was also oriented east and west.

Three shallow pits (Features 7, 15, and 61) were subrectangular with rounded corners, convex sides, and flat bases. They varied in length from 8.7 to 11 feet; 4.8 to 8.3 feet in width; and averaged 1.5 feet in depth. All of the pits contained refuse such as ash, charcoal, and broken stone. They also contained clay-pipe fragments, gun flints, nails, broken glass, and considerable quantities of animal bones. Two well-worn human upper incisors were found in F–61.

Five of the pits (Features 4, 6, 13, 14, and 60) had steep, nearly vertical walls, rounded to level bottoms, and a narrow ridge or septum of earth across the short axis of the pit. These ridges were rounded, and about 1 foot high and 1 foot wide. They had been made at the time the pits were originally dug as they were of undisturbed native soil (pl. 56, *b*). These pits were rectangular in outline, with rounded corners.

Feature 14 will be discussed separately, as it was found inside the central log cabin, Feature 63. It was oriented east and west, and one of the floor joists passed directly over the earth septum. This pit was smaller than those found in the post enclosure, measuring 2.2 feet deep, 4.1 feet wide, and 7 feet long. It had apparently been open at the time the post burned, since flooring had collapsed into the pit. Artifacts were scarce, but some animal bone was found here. This pit has been discussed in connection with the central log cabin, Feature 63 (p. 259).

The remaining four pits were outside the buildings, and were larger than Feature 14. They averaged 4.2 feet deep, 6.3 feet wide, and 11.8 feet long. Refuse was present in each pit, but was particularly abundant in Feature 13, which contained much burned earth and other debris. Animal bone, earthenware fragments, clay-pipe fragments, broken window glass, gun flints, buttons, beads, and an elk metapodial flesher were recovered from these pits.

Two of these pits, Features 4 and 60, contained decayed wooden slabs at the bottom of them. These had apparently served as flooring, which was laid over the septum and served to keep stored goods off the ground and would have kept them out of water if moisture had seeped into the pits. It seems likely that the other pits in this grouping also had wooden floors when they were in use (pl. 56, *b*). The function of these pits is a matter of speculation, although it would appear probable that they were originally used for the storage of trade goods. Perhaps these were the white fur trader's caches and analogous to native cache pits. After these pits were abandoned for the storage of trade goods or other valuables, they were obviously used for the deposit of kitchen refuse and other debris around the post enclosure.

SMALL PITS

Five small square or rectangular pits (Features 8, 10, 28, 49, and 50) were found. Two of these, Features 28 and 49, contained cottonwood posts; both had fills of mixed earth with some charcoal present. They had apparently served only as postholes.

Feature 8 was in front of the central and eastern cabins. It was 2.8 feet square in horizontal outline, and tapered to 2 feet in width at the bottom. It was 2.5 feet in depth, containing fragments of wood, a quantity of fired chinking, animal-bone fragments, nails, a series of leather shoe fragments, clay-pipe fragments, a piece of glazed earthenware, and birchbark.

Feature 10 was in the east-central portion of the enclosure. It was about 2.3 feet square and 1 foot deep. The fill was a hard flaky soil that contained charcoal, pieces of lignite coal, a piece of animal bone, granite fragments, and a piece of wrought iron.

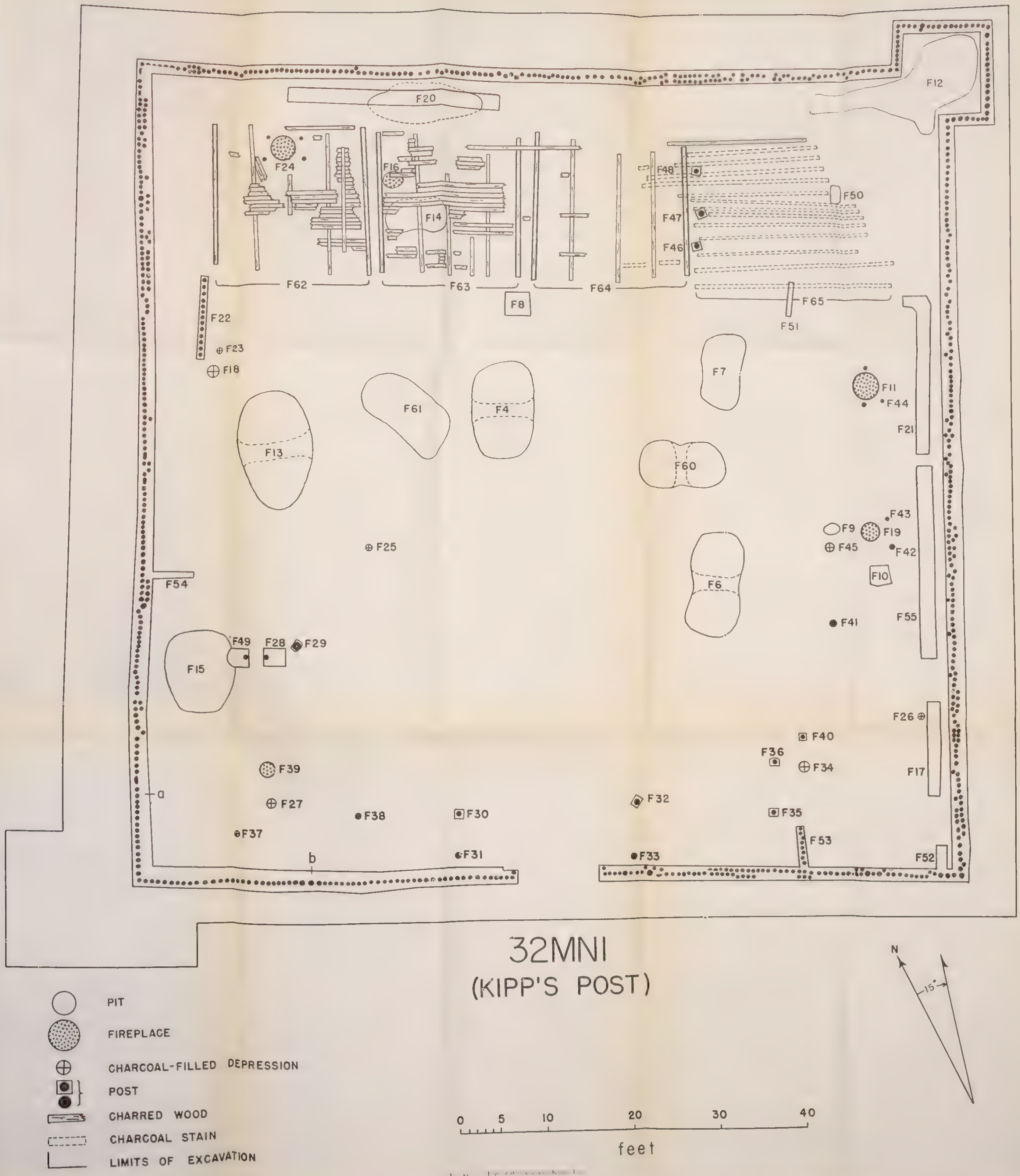
Feature 50, a small pit in the shed (F–65), measured 2 feet north and south, and 1.4 feet east and west. Depth was 1 foot. The pit fill was clay and it contained charred wood and six lead rifle balls.

A small oval pit, Feature 9, was on the eastern side of the enclosure near Feature 19, a fireplace. It measured 1.5 feet north and south and 1.9 feet east and west; its depth was 1.6 feet. The pit fill was a loose gray clay which contained about a pound of melted lead fragments, one gun flint, small beads, and a wrought-iron harpoon. The presence of melted lead in this pit and its closeness to a fireplace indicate that it had some connection with the casting of rifle balls.

BURIAL PIT AND BURIAL

A small rectangular pit (F–52) was in the southeastern corner of the enclosure abutting against the south stockade trench. It was oriented north and south and was parallel to the east stockade trench. The pit was 2.5 feet long, 1.3 feet wide, and 1.2 feet deep. It contained a primary infant burial in a nailed wooden box and several thousand blue glass seed beads. The burial was that of an infant about 6 months of age. It was extended, and lying on its left side. The head was to the south, with the face to the west (pl. 57, *b*).

The sockets for the incisors, canine, first and second molars were present, but the teeth were absent. The second left-lower incisor was in place, largely because of the fact that it had not yet erupted. The lower incisors erupt at between 6 and 9 months of age (Hooton, 1946, p. 732).


F20
F12
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F23
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F34
F17
F39
F27
F38
F30
F32
F35
F53
a
F37
F31
F33
F52
b
N
15°
PIT
FIREPLACE
CHARCOAL-FILLED DEPRESSION
POST
CHARRED WOOD
CHARCOAL STAIN
LIMITS OF EXCAVATION
0
5
10
20
30
40
feet

32MN1

(KIPP'S POST)

ARTIFACTS

DEFENSE

Cannon (*1; 11 fragments*) (*fig. 23*).—Judging from the number and the shrapnellike appearance of the fragments, the cannon had exploded. The 10 portions of the cannon recovered (specimen Nos. 293–302) allowed the reconstruction herewith made by Dr. Carlyle S. Smith of the University of Kansas. Dr. Smith's description of this unusual find follows:

> The fragments of a cast-iron one-pounder cannon and one bolt from the carriage are present. As reconstructed in the drawing (fig. 23) the complete barrel must have measured about 29½ inches in length. The bore length is 24½ inches. The caliber is approximately 2⅛ inches, appropriate for a cast-iron ball weighing one pound, or a handful of musket balls. The casting shows excessive porosity and repairs using wrought iron.

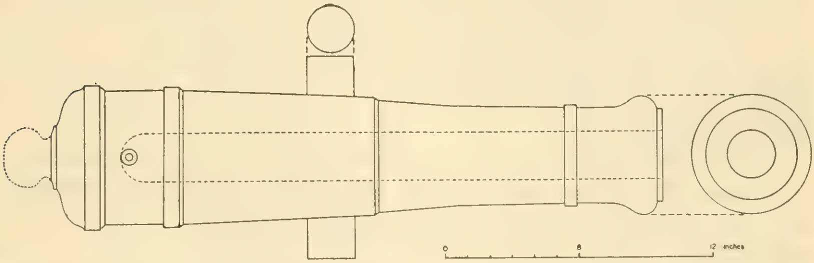

Figure 23.—A reconstruction of the one-pounder cannon found within the post. Made by Dr. C. S. Smith of the University of Kansas. Specimen Nos. 293–302.

> According to Jac Weller (personal communication to C. S. Smith) such cannon were made in small iron founderies in Pennsylvania and New York between 1778 and 1781 for the use of the continental Army. Harold Peterson (personal communication to C. S. Smith) thinks it likely that the piece was made early in the 19th Century expressly for the fur trading company. Little is known about cannon of this type.

One wrought-iron bolt, without threads, and presumably from the cannon carriage, is 7 inches long, and has a head 2 inches square. The head is ½ inch thick; the shaft is 1$\frac{1}{16}$ inches in diameter (No. 123).

HUNTING AND OTHER SUBSISTENCE ACTIVITIES

Flintlock hammer (*1*) (*pl. 58, a*).—Dr. Smith's description:

> One hammer from a flintlock rifle of the pattern manufactured at the armory at Harpers Ferry, Va., for the use of the U.S. Army between 1803 and 1807 is present. Its size and conformation eliminate all other possibilities. Such rifles were carried by the Lewis and Clark Expedition.

This is the lowermost portion of a flintlock hammer. The top portion which held the flint against the lower jaw of the vise is missing.

The hammer measures 2⅝ inches in length and 1⅛ inches in width (No. 280).

Gun flints (*25*) (*pl. 58, b, c*).—Dr. Smith's description:

> The 23 gun flints are all of English manufacture, ranging from gray to black in color, and square or rectangular with four sharp corners. Ten are of horse pistol size (25×20 mm. to 26×22 mm.) but could have been used in trade guns with medium-sized locks. Six are for rifles or single barrel fowling pieces with small locks (22×18 mm. to 24×17 mm.). Four are for use in pocket pistols or rifles with small locks (ca. 19×9 mm.). Two are of carbine size but would fit trade guns with large locks (28×20 mm. to 29×21 mm.). It is noteworthy that musket flints are absent.

Most of these gun flints are badly worn from use and were probably discarded. The two specimens illustrated are little used (Nos. 140, 193). Many of those recovered were considerably damaged by having been burned in a fire (Nos. 62–76, 140, 181, 193, 233, 237, 246, 269, and S.I. 8). After Dr. Smith had studied these materials, two additional gun flints from the site were found by Col. Dana Wright of St. John, N. Dak. One measures 24 by 20 mm; it is of the horse-pistol size. The other is 21 by 18 mm. and is presumably for a rifle or fowling piece.

Gun worms (*2*) (*pl. 58, g*).—These tapering spring screws are 1¹¹⁄₁₆ and 1⅝ inches long; and are ⁹⁄₁₆ inch in diameter They were used to remove wadding from muzzle-loading guns (Nos. 28 and S.I. 26).

Ramrod (*?*).—A section of a brass ramrod (?) has a total length of 15¼ inches and a diameter of ⁵⁄₁₆ inch. One end is filed to a blunt tip. This specimen could also be heavy brass wire stock for the manufacture of bracelets (No. 35).

Spherical lead balls (*23*) (*pl. 58, d, e*).—Dr. Smith's description:

> All are spherical lead balls for use in muzzle loading weapons. One is a mere fragment. One is a crushed spent bullet. Twelve were cast off center in a poorly adjusted mold. The six perfect specimens range in size from .475″ to .566″. One measures .475″; two measure .545″; one measures .555″; two measure .566″. All of the imperfect specimens resemble those in the .545 to .566 group. Two sprews, one from a single cavity mold and one from a double cavity mold are present.

The specimen numbers follow: Nos. 12–23; fragment, 218; (6) 264. An additional lead ball was found by Col. Dana Wright; it measures .54 caliber. Two other lead balls were found by Fred La Rocque, New Town, N. Dak. One measures .566 and the other is .584 caliber.

Sprews (*3*) (*pl. 58, f*).—The sprews mentioned by Dr. Smith above are short triangular objects; these are the excess lead left from casting balls in the molds. The 1-cavity mold left one short circular plug extending outward from the apex of the triangular cross section, and the 2-cavity mold had two circular plugs. Still another sprew was found at this site, but Dr. Smith did not see it. This specimen is a sprew from a 4-cavity mold. It is 3⅝ inches long and ¾ inch wide at its widest point. It has four nipples or teats on it. These are separated from each other by approximately ⅝ inch. The overall length of this mold appears to have been about 4½ to 5 inches (Fred La Rocque). The 1- and 2-cavity sprews are Nos. 36 and 37.

Shot (190).—Dr. Smith's description:

> The lead shot range in size from No. 3 (.140 inch) to BB (.180 inch). There are a few examples of No. 1 (.160 inch) and B (.170 inch).

Specimen numbers are 11 and 184.

Melted lead fragments (ca. 2 pounds).—About 2 pounds of melted lead drops and rivulets were found. Small drops were common, with a few irregular blobs of metal (Nos. 39, 166, 184, 236, 241, and 291).

Harpoon (1) (pl. 58, h).—A barb projects outward and rearward 2½ inches from the point of this wrought-iron specimen. The shaft appears to be broken and was probably much longer originally. The harpoon head is ¾ inch at its widest point and 3⅝ inches in length. The specimen is similar to an object labeled "muskrat spear" in the collections of the State Historical Society of North Dakota (cat. No. 2281). (No. 183.)

Seeds (92).—Seventy-three specimens were identified as wild plum stones, *Prunus americana;* 19 were identified as chokecherry stones, *Prunus virginiana* (Nos. 95, 208, 235).

HOUSING AND CONSTRUCTION MATERIALS

Nails (90).—These cut-iron nails are rectangular or square in cross section. The heads vary considerably in size and form. The length and diameter of these are tabulated below:

Number of specimens:	Length (inches)	Width of shank (inches)
2	6⅝	5/16
4	5⅝	⅜
4	4⅞	¼
8	4⅛	¼
4	4	¼
17	3¼	3/16
22	3⅛	⅛
10	2¾	3/16
8	2¼	3/16
6	2⅛	⅛
2	1⅝	⅛
2	1¼	⅛

Spikes (2).—These handwrought iron spikes are circular in cross section with hemispherical heads. One is 3¼ inches in length and the other is 2½ inches in length. These were apparently hammered out at a blacksmith shop and perhaps even at this post (Nos. 209 and 287).

Staples (2) (pl. 58, k).—These are large, with rectangular loops. They were probably hand forged and are not similar to the later U-shaped fence staples. The specimens measure 1¾ to 2¾ inches long and 1 to 1¼ inches wide (Nos. 274 and 290).

Door hook (1) (?).—This specimen is fragmentary, but probably represents the end of a door hook. It is made of wrought iron and is ⅜ inch in diameter and 1¼ inches long (No. 43).

Door pintle (1) (?).—This is formed of an iron bar which is square in cross section and has tapered ends. It is 5/16 inch in diameter and 6⅛ inches long. It is bent at right angles at its midpoint. Pintles of this form were used to hang doors, but the specimen described lacks a rounded section on which a door could rotate (No. 44).

Lock fragment (1) (pl. 58, i).—This is a rectangular plate of wrought iron 2¼ inches long, 1⅜ inches wide, and 1/16 inch thick. One end of the plate is flat; the other is convex. A circular piece 1⅛ inches in diameter and 3/16 inch thick is fastened to the center of the rectangular plate. It bears a rectangular hole ⅞ inch long and 7/16 inch wide. A small rectangular projection extends into the hole at one end, and another projection extends out of the hole at the other end. A bolt 1 9/16 inches long is fastened to the convex end of the rectangular plate.

This lock could have been used on a door of one of the cabins though it is rather small. It seems more likely that it was used on a chest or toolbox (No. 147).

Bolt catch (1) (pl. 58, j).—This is a rectangular plate of wrought iron 2 inches long, 13/16 inch wide, and 1/16 inch thick. A screw hole is placed near each end. Between these holes is an arched metal band which is 13/16 inch in height; a bolt was probably slid into this.

There is also a possibility that this specimen served as part of a hasp and was fastened to the body of the chest, while a plate with a hole in it passed over the arched metal band. A padlock could then have been fastened over the joined hasp. It is also possible that this item was a part of the lock described above (No. 38).

Window glass (8 fragments).—(6) Thickness of these small pieces is 1/32 inch. (2) Thickness of these fragments is ⅛ of an inch. It is impossible to draw any conclusions as to the numbers of windows in use at this site from the scanty remains. It is obvious, however, that windows of some sort must have existed in the cabin used as a kitchen and most probably in the living quarters (Nos. 142, 143, 148–153).

Chinking (ca. 80 pounds).—Large quantities of chinking were found in the area where the log cabins had stood. Much of it had been fired when the buildings were burned. In general, the chinking was V-shaped, showing that it had been pressed between horizontal logs while still moist. Some of the chinking had grass stems in it. None of the pieces were more than about 6 inches in length (No. 292).

HOUSEHOLD GOODS, PERSONAL POSSESSIONS, TOOLS, AND EQUIPMENT

Cup (4 fragments).—An undecorated white glazed earthenware cup is suggested by these fragments. Size is indeterminate (Nos. 106, 111, 116, and 118).

Cup or saucer (3 fragments) (pl. 59, f).—Blue leaves and flowers with orange-brown centers decorate this glazed earthenware specimen. The designs are apparently underglaze transfer in form (Nos. 103, 108, and 117).

Dishes (39 fragments).—Nine dishes are probably represented by these pieces of glazed earthenware.

(3) These fragments are from the wavy rim of a white plate. The lip and part of the interior rim are green; it is decorated with a series of vertical wavy lines, underglaze (Nos. 105, 110, and 250) (pl. 59, *h*).

(16) This partially reconstructed saucer is 5$^{11}/_{16}$ inches in diameter and stands 1¼ inches high. The lip is plain; the bottom bears a few blue leaves and flowers and the sides bear conventionalized leaves against a blue background. This design is underglaze transfer work (Nos. 134, 135, 136, 137, and one piece from F12) (pl. 59, *b*).

(8) Two undecorated vessels with wavy rims are represented by these sherds. Form is indeterminate (Nos. 102, 104, 112, 113, 119, 128, 129, and 180).

(6) A partially restored saucer, 7 inches in diameter; it stands 1½ inches high. Blue leaves and flowers in a hand-painted underglaze decorate it (Nos. 98, 99, 100, and 114) (pl. 59, *a*).

(2) These fragments are from a small vessel with blue leaves and flowers in an underglaze transfer design on both the exterior and interior of the specimen. Form is undeterminate (Nos. 97 and 101) (pl. 59, *d*, *e*).

(1) A dish or saucer with a white lip, blue and white flower design. It is underglaze transfer ware (No. 120) (pl. 59, *c*).

(2) A saucer with blue and white designs similar to the other dishes described previously (Nos. 107 and 115).

(1) A dish or saucer fragment with a blue and white design unlike the other specimens discussed previously. Only a little of the design is present (No. 109) (pl. 59, *g*).

Mirror glass (3 fragments).—Plate glass, $5/24$ inch thick, with some traces of silvering (?) on it. Probably from a large mirror. These fragments may postdate the site, since they were found in decayed vegetal matter above the level of the ground in one of the pits (Nos. 149, 151, and 152).

Tumbler fragment (1).—This is from near the rim of a tumbler or glass. Fluting shows on the fragment. A projection of the arc of this fragment indicates a diameter of about 2 inches. It is probably from a waterglass of about 4 to 6 ounces capacity (No. 127).

Bottles (*15 fragments*):

(2) The base of a large circular clear-glass bottle about 6 inches across the base is indicated. One portion of the fragment is chipped and may have been used as a cutting edge (No. 148).

(1) A green glass bottle, probably a wine bottle, the neck and lip of one fragment (No. 277).

(1) A single fragment of curved green glass; it is probably a portion of the wall of a green wine bottle, and may be part of the specimen discussed above (No. 153).

(1) A fragment of clear glass, from a bottle about 2½ inches in diameter at the base (No. 150).

(10) Curved fragments of lead and clear glass, ⅓₂ to ³⁄₁₆ inch thick. These may be from small medicine bottles (Nos. 142, 143, 216, 217, 243, 248, 275, 276, 285, and 288).

Thimble (*1*) (*pl. 60, c*).—This specimen is of brass and resembles modern thimbles. It has round pits on the end and a portion of the sides. The shape is that of a truncated, rounded cone. It was presumably used by a woman, as it is too small to fit a man's finger. Diameter at base is ⁹⁄₁₆ inch (No. 24).

Straight pins (*3*).—These are straight brass household pins with round heads, 1 inch in length. They are, in general, similar in size and form to modern examples made of steel (No. 41).

Finger rings (*2*).—Both of these are made of brass. One specimen is made from a band ⁵⁄₃₂ inch wide and ¹⁄₃₂ inch thick. Diameter of the ring is ⅝ inch. It is made from a continuous strip of metal and may have been gilded or plated (No. 206).

The other ring is nearly the same size, but bears a clear molded and faceted glass set. The set is held to the band by a small circlet which completely encircles it. Width of the band is ³⁄₃₂ inch; thickness, ¹⁄₃₂ inch; band diameter, ¹¹⁄₁₆ inch (No. 31) (pl. 60, *d*, *e*).

Bangles (*2*).—These bangles, or "tinklers," are made from sheet brass rolled into cones varying in length between 1⅛ and 2½ inches. They are similar to examples found on Indian costumes fastened to the bottom of skirts and leggings which rattled when the costume moved (Nos. 32 and 33).

Ear ornaments (*5*) (*pl. 60, f*).—These are factory-made specimens, conical in form, with the small end bearing an attaching loop; the large ends enclosed with a soldered circular plate. The three complete specimens are ¹³⁄₁₆ inch in length. All of these specimens are covered with a black tarnish which suggests that they are made of silver or silver alloys. Ornaments of this style were ordinarily worn in small clusters of 5 to 12 in each ear, hanging from the lobes. However, occasionally the rim of the ear would be pierced at intervals and the ornaments hung in clusters of two or three (Beaubien, MS., p. 30) (Nos. 25 and 41).

Clay pipes (165 fragments) (pl. 61).—Fragments of short-stemmed clay pipes, with bowls set at an obtuse angle to the stem, are well represented. The majority of the stems are plain, but several have molded designs near the bowl. These designs consist of ridges on the upper part of the stem transverse to the length of the stem, between which are small nodes. One partially restored bowl with this type of design on the stem has a little of this line and dot design. That portion of the bowl remaining has a series of flutes running up it for ½ inch. Bowl height is 1¾ inches and bowl diameter is ⅞ inch (No. 177) (pl. 61, *i-n*).

Two partially restored bowls, with spurs, and three stems with spurs, are of the familiar "TD" design. This form of clay pipe commonly had a stem about 6 inches long. The bowl projected from the stem at an angle of about 100 degrees and was about 1½ inches in height, and ¾ inch in diameter. On the rear of the bowl a wreath encircles the letters "TD." The letters "G" and "W," are frequently found on the two sides of the spur. They are probably manufacturer's marks (Nos. *48*, *225*; *48*, *48*, *139*) (pl. 61, *a-f*).

There appear to be two varieties of the TD pipes in this sample. Four of the five spurs have the letter W on the left-hand side. The stems are plain. The fifth spur has the letter G on its left-hand side; it also has five small diagonal lines above this letter. This difference may be just a mold peculiarity and not a significant distinction.

Another make of pipe is represented by one sample which consists of the base of a bowl, spur, and portion of stem. It is different from the TD styling and from those decorated with fluting on the bowls and lines and dots on the stems (pl. 61, *h*).

This specimen has a spur much smaller than any of the others from this site; the stem appears to have been plain. The most striking thing about it is the bowl base which is covered with fine fluting. The bowl of this specimen appears to have been set at an angle of about 100 degrees from the stem (No. 48) (pl. 61, *g*).

One specimen represented only by a bowl fragment, seems to be from still another type of pipe. The bowl fragment is about twice as thick as any others and came from a heavier type of pipe (No. 196).

The slender pipe stems were apparently broken more frequently than the bowls. If enough of the stem was left to make it still usable, the pipe was retained. Two stems decorated with the line-and-dot design and 2 to 4 inches long, have teeth marks at their ends (Nos. 227 and 256) (pl. 61, *k–l*). One hundred and thirty-eight stem fragments were recovered.

A study of the 27 bowl and 138 stem fragments indicates that there were approximately 12 pipes with fluted bowls and the decorated stems. There were approximately 9 of the TD pipes and 2 miscellaneous pipes. Portions of 23 pipes were recovered.

A considerable quantity of shale and catlinite pipes made with metal tools were found in the log-cabin area of the post. In all likelihood some of them were probably used by the white employees here, while others were apparently made solely for the fur trade at the post. These will be discussed under the heading "Trade Materials."

Turned bone letter seal handle (*1*) (*pl. 60, a*).—This unusual specimen is thought to be the handle of a letter seal (lacking steel die) that was used in conjunction with sealing wax to seal letters prior to the general use of the gummed envelope.

The lath-turned bone handle is 2½ inches long, and has a mahogany color. The distal end is flat; the other bears a hole ⅛ inch in diameter and ⅜ inch deep which was used to hold the steel die (No. 204).

Sealing wax (*?*) (*pl. 60, b*).—This item is 2³⁄₁₆ inches long, with a diameter of ⁷⁄₁₆ inch. One end is pointed, the other is blunt. It has the appearance of burned bone, but is not. Pending laboratory analysis, it is thought to be a stick of sealing wax (No. 247).

Doll legs (*1 pair*) (*pl. 60, g*).—The doll is represented as walking, since the one-piece legs are partially flexed at the knee. Black high-heel shoes are represented on the feet. A groove encircles the thighs, probably for attaching the legs to a cloth or leather body; beneath the groove is a hole through both legs. The legs are molded hollow (No. 121).

Double-pointed awl (*1*) (*pl. 60, k*).—This steel awl is double pointed, and is offset in the center, to facilitate hafting when reversing the ends. The cross section is rectangular, and it is 3⅜ inches long (No. 278).

File (*1*) (*pl. 62, a*).—A triangular steel file 5¾ inches long; maximum thickness is ⅜ inch. The file is pointed at both ends, and was probably used for delicate metalwork, such as the filing of saw teeth (No. 45).

Whetstones (*2; in 3 pieces*).—One straight-sided, rectangular commercial whetstone, made from a fine-grained sandstone. It was found in two pieces. Length 6¾ inches; width, 1⁵⁄₁₆ inches; thickness, ⁹⁄₁₆ inch (Nos. 57 and 186) (pl. 62, *c*).

A commercial whetstone. It has one straight side and one curved one. Length is 7 inches; width is 2 inches, and thickness 1 inch. It is made from a fine-grained sandstone (?). All sides show some usage. This stone was probably used for forming a fine edge on blades (No. 187) (pl. 62, *b*).

Dressed piece of limestone (*1*) (*pl. 62, d*).—A limestone fragment is 2⅜ inches thick. One side is flat and polished; the other side bears shallow troughs, the crests of which are about ¼ inch apart. These were made by a saw. No suggestion can be made as to the usage of this specimen and it is possible that it postdates the fur trade post, as it was not found in situ (No. 1).

Brass wire (3 pieces).—Two specimens of brass wire or rods are $\frac{5}{16}$ inch in diameter, and seemingly identical with the "brass ramrod" discussed previously. Both portions are curved as if forming a chain link or a small bracelet (Nos. 46 and 282).

Another specimen is $2\frac{1}{2}$ inches long and $\frac{3}{16}$ inch in diameter. Brass wire such as this was probably sold to the Indians for ornamental purposes. It could also have been used around a blacksmith shop (No. 286).

Steel wire (*1 fragment*).—This is a twisted fragment of iron or steel wire $\frac{1}{16}$ inch in diameter and approximately 4 inches in length. One end of the wire is looped through an eyed and threaded bolt which is described under "Eyed bolts" (No. 27).

Sheet brass strips (3).—One strip is 3 inches long, $\frac{5}{8}$ inch wide, and about $\frac{1}{64}$ inch thick. This specimen is incomplete; a rivet hole $\frac{1}{8}$ inch in diameter is located about $\frac{5}{8}$ inch from the completed end. At the opposite end, a hole $\frac{1}{8}$ inch in diameter is present; the specimen is broken through this hole. The complete specimen was apparently $3\frac{1}{2}$ inches in length. It is quite possible that this brass strip was a part of a jackknife handle (No. 47).

Two irregular sheets of brass about $\frac{1}{64}$ inch thick were found. They had apparently been cut from stock sheet brass or brass kettles with chisels. It is possible that they were rejects in the manufacture of brass bracelets, ear ornaments, or clothing ornaments (bangles) (Nos. 159 and 160).

Eyed bolts (*2*) (*pl. 60, l*).—These bolts are almost identical in size though somewhat rusted. Length, $1\frac{5}{8}$ inches; diameter, $\frac{3}{16}$ inch; diameter of eye, $\frac{1}{2}$ inch. Both have square nuts which are $\frac{3}{8}$ inch wide. It is possible that these were once used to fasten small chest or drawer handles (No. 27).

Chain link (*1*) (*pl. 60, j*).—This specimen is $1\frac{3}{8}$ inches long, and formed of wrought iron $\frac{1}{8}$ inch in diameter. The link is in the form of a "figure eight" and is $\frac{1}{2}$ inch in diameter (No. 27).

Horse bit (*?*) (*1*) (*pl. 62, e*).—This consists of a wrought-iron ring $3\frac{1}{2}$ inches in diameter and $\frac{5}{16}$ inch thick. A portion of the part that went into the horse's mouth is attached to this ring (No. 146).

Tube (*1*) (*pl. 62, g*).—This specimen is $1\frac{3}{8}$ inches long; $\frac{5}{8}$ inch in diameter; and the walls are $\frac{1}{16}$ inch thick. One end of the tube is flared slightly and bears crude threading. No possible use has been suggested for this specimen (No. 30).

Staple (*1*) (*pl. 62, f*).—This is not a conventional staple. It consists of a flat bar 2 inches long and $\frac{11}{16}$ inch wide. This portion forms the back or base of the staple. Two prongs 2 inches in length project from this base. These are tapered and sharpened at the ends. This specimen was apparently used to hold two pieces of wood together or to fasten an object to wood. It is possible that it was once used to fasten the felloes of a wagon wheel together. This specimen was recovered by fieldwork at the site in 1938, and quite possibly was not associated with the fur trade post (No. 303).

Lead bale seal (*1*) (*pl. 60, h–i*).—This circular bale seal is 1³⁄₁₆ inches in diameter and ¹⁄₂₄ inch thick. The front side is flat and bears two sets of numerals associated with 3 incised lines. Between the upper and central lines are the numerals "1513," and between the central and bottom lines are the numerals "21."

The back side of this specimen has a raised ovate central boss of lead. On the boss are a series of letters which appear to read the following: "ARENR–." Beneath the indecipherable letter is an "R."

Bale seals had a function much like that of the modern boxcar seal; they were used to prevent the pilfering of goods in storage or transit. Bales of blankets and cloth were often safeguarded with them. Many had a strap with a hole in it on one edge of the disk which was bent over the boss, and the boss was hammered flat to seal the loop made by the strap (No. 26).

Circular wooden object (*1*) (*pl. 62, h*).—A portion of this specimen is absent, but the size can be reconstructed from projected chords. It is circular, and 2¾ inches in diameter and approximately 1 inch thick. A circular hole, 1 inch in diameter, is located in its center. It is possible that this specimen once served as a washer around a large bolt. It might be associated with the bolt from the cannon carriage which was described under the heading "Defense" (No. 239).

Rope (*1 piece*).—This charred rope, probably composed of hemp, is made from two strands of fibers. The chords in the two strands have an S twist; the rope is made with a Z twist. The rope is crushed rather flat, but the strands are ¼ inch in diameter (No. 252).

Birchbark (*2 pieces*).—Both specimens are rolled. One of them is 1¼ inches wide; the other is 3¼ inches wide (Nos. 94 and 176).

CLOTHING AND FOOTWEAR

Buttons (*24*) (*pl. 63*).—Of this number, 4 buttons are steel, 11 brass, and 9 bone. Two of the steel buttons are ¾ inch in diameter; these have four holes for attachment to the cloth (Nos. 42 N and O) (pl. 63, *k*). The other two steel buttons are also ¾ inch in diameter; these have loop attachments. One of them is of a bright highly polished steel (Nos. 42 M and 200) (pl. 63, *i*, *j*).

The brass buttons are in several sizes (the number in each size shown in parentheses), though all except one of them have eyelet or loop fasteners on their backs.

(1) Diameter, 1¹⁄₁₆ inches; thickness, ¹⁄₃₂ inch; body is flat. "PLATED" is stamped on the rear (No. 42 a) (pl. 63, *a*).

(2) Diameter, ¾ inch; thickness, ³⁄₆₄ inch; body is flat. "BEST QUALITY" is stamped on the rear (No. 42 b) (pl. 63, *b*).

(2) Diameter, ¹¹⁄₁₆ inch; thickness, ¹⁄₂₄ inch; body is flat. "BEST QUALITY" is stamped in a circular fashion on the rear above a wreath. A sunburst is in the center around the loop (Nos. 34 and 42 c) (pl. 63, *c*).

(1) Diameter, ⅔ inch; thickness, ¹⁄₂₄ inch; body is flat. "BEST QUALITY" is stamped on the rear. Design is much similar to those buttons described in paragraph No. 2 above (No. 42 d) (pl. 63, *d*).

(1) Diameter, ¹¹⁄₁₆ inch; thickness, ¹⁄₁₆ inch; front is flat, rear is concave (No. 42 e) (pl. 63, *e*).

(1) Diameter, ⅝ inch; thickness, ³⁄₆₄ inch; body is flat (No. 42 f) (pl. 63, *f*).

(1) Diameter, ⁹⁄₁₆ inch; thickness, ¹⁄₂₄ inch; body is flat. "WARRANTED SUPERIOR" is stamped on the rear (No. 42 g) (pl. 63, *h*).

(1) Diameter, ¹¹⁄₁₆ inch; thickness, ¹⁄₁₆ inch; body is concave. This specimen has four holes for attachment to the cloth (No. 42 h) (pl. 63, *g*).

(1) Diameter, ⁹⁄₁₆ inch; thickness, ⁷⁄₁₆ inch. This specimen is composed of two thin brass shells which, when fitted together, formed a spheroid. A loop is on the rear of one shell, and an iron stud on the front of the other. It is quite probable that the anterior portion of this button was covered with cloth (No. 40).

Four of the bone buttons are ¹¹⁄₁₆ inch in diameter. Their thicknesses vary, but the basic design is much the same. These have four holes in the form of a square grouped around a central hole. Average thickness is about ³⁄₃₂ inch (Nos. 42 i, and 195) (pl. 63, *l*). Another button of this same general pattern is ⅝ inch in diameter and ¹⁄₁₂ inch thick (No. 42 j) (pl. 63, *n*). Two other bone buttons have this same general pattern, though they are much smaller than the others. These specimens are ⅜ inch in diameter and ¹⁄₁₆ inch thick (No. 42 k) (pl. 63, *o*).

The last two bone buttons in this series are merely flat, round disks with a single hole in their centers. One specimen is ⅝ inch in diameter and ¹⁄₁₆ inch thick (No. 42 l) (pl. 63, *m*). The other is ⅜ inch in diameter and ¹⁄₁₆ inch thick (No. 42 p) (pl. 63, *p*).

Cloth (2 fragments).—One specimen is of hair or wool fibers, very loosely woven. It is of a Z-spun yarn; both warps and wefts are paired. It is a plain weave as far as can be determined with such small areas of intact weave. This item is undoubtedly handwoven and possibly made of buffalo hair (No. 125).

The other piece is of linen or wool. It has a plain weave with one element predominating over the other. With no selvages it is impossible to tell whether it is a predominant warp or weft. The weave is very close and even, but the thread size varies. There are 34–38 threads to the inch in one direction, and 44–48 to the inch in the other. This specimen is probably handwoven, but there is no way of definitely establishing this.

Shoes (3):

(1) Outside length, 10¼ inches; width, 3¼ inches. Inside length, 8 inches; width 2½ inches. A laminated leather heel and the sole are fastened with small wooden (oak?) pegs (No. 169).

(1) Outside length, 10¼ inches; width, 3½ inches. Inside length, 10 inches; width, 3¼ inches. The laminated leather heel and the sole are fastened with small (oak?) pegs. The toe is plain, and the shoe laced through a single pair of eyelets (No. 170) (pl. 63, *q*).

(1) A leather heel, composed of laminated leather; it has wooden (oak?) pegs holding it together (No. 210).

The two complete shoes found did not match each other and are of considerably different styles. It is probable that they represent men's and women's shoes.

TRADE GOODS

Beads (ca. 6,700).—Beads were present in a considerable variety of sizes, forms, and colors at this site. Most of them were found within Feature 3, the log-cabin area of the post, though a few were recovered from the pits.

The measurements used were obtained with vernier calipers and are generalized when dealing with a series of beads. Colors are given as they appear to the writers, not through a comparison with a standard color chart. Gradations in color are often imperceptible, and many of the beads described herein are discolored because of changes caused by chemical actions of the soil and by firing. Many suggestions from studying these specimens were obtained by consulting G. Hubert Smith's paper, entitled "Indian Trade Beads from Fort Berthold, North Dakota" (1953, pp. 41–56).

A variety of classifications were available for dealing with the beads, but the writers have grouped them into large beads and seed beads. The large beads are those specimens that were used principally in necklaces. These are present in translucent and opaque materials. Forms are globular, spherical, cylindrical or canons, subcylindrical, and faceted. Colors are blue, white, colorless (clear glass), amber, green, and black.

The seed beads are oblate spheroids or subcylindrical in form. These are present in white, blue, black, and green colors. The blue and white beads are by far the most common and have gradations in size.

All of the beads discussed with the exception of the faceted and canon beads are of the wire-wound variety, as they were made by twisting molten glass or glass frit around a spindle. Examples of all types of beads are illustrated.

Large beads, translucent:

(1) The largest specimen in this series is 16 mm. in diameter and 16 mm. in length. It is an oblate spheroid in form, and is made of a somewhat milky white glass (No. 201, F–13) (pl. 64, *e*).

(1) This bead is globular and made of an amber-colored glass. It is 14 mm. in diameter and 10 mm. in length (S.I. No. 40, F–66) (pl. 64, *f*).

(1) This globular bead is made of a colorless clear glass. It is 11 mm. in diameter and 8 mm. in length (No. 304, F–3) (pl. 64, *g*).

(1) A globular bead made of a blue glass; it has an opaque white center and is 9 mm. in diameter and 7 mm. in length. This specimen has been heavily fired and retains only a little of its original gloss (No. 305, F–3) (pl. 64, *h*).

(6) These subcylindrical beads are made of a dark-green glass. They range in diameter from 5 to 7 mm. and from 5 to 6 mm. in length (No. 306, F–3) (pl. 64, *i*).

(5) These globular specimens are a bright blue in color; they range in diameter from 6 to 7 mm. and from 3 to 6 mm. in length (No. 307, F–3) (pl. 64, *j*).

(1) A subcylindrical bead made of an amber-colored glass. It is 7 mm. in diameter and 5 mm. in length (No. 308, F–3) (pl. 64, *k*).

(16) These subcylindrical beads are a bright blue in color; they average 5 mm. in diameter and 4 mm. in length. They are very similar to the blue beads described above and differ only in having a more cylindrical form and a smaller size (No. 309, F–3) (pl. 64, *l*).

(2) These subcylindrical beads have an amber color and are 4 mm. in diameter and 2 to 3 mm. in length (No. 310, F–3) (pl. 64, *m*).

The sixty-five translucent faceted beads are white (colorless clear glass), blue-green, bright blue, and black. There are 23 white faceted beads. Nineteen of them are of a translucent glass throughout. Three of them have milk-white paste centers. This series ranges from 5 to 6 mm. in diameter and 4 to 6 mm. in length. Twenty-two white faceted beads are from F–3; one is from F–14 (No. 311) (pl. 65, *a*).

There are 23 blue-green faceted beads. All are of a translucent glass and none of them have paste centers. These were from 5 to 7 mm. in diameter and averaged 5 mm. in length. Twenty-two were found in F–3 and one in F–4 (No. 311) (pl. 65, *a*).

Eighteen bright-blue faceted beads were found. These were in two sizes, and 15 of them have white paste centers. There were 10 large beads of this color. These ranged from 5 to 7 mm. in diameter and 5 to 6 mm. in length. Seven of these had white paste centers. There were eight small beads of this color, averaging 4 mm. in diameter and 4 mm. in length. All of them had white paste centers. Sixteen of the blue faceted beads were found in F–3 and two in F–15 (No. 311) (pl. 65, *a*).

One black faceted bead was found. It was 6 mm. in diameter and not translucent. It had been heavily fired, probably when the log cabins burned, and perhaps thus lost its translucence. This specimen was found in F–3 (No. 311).

Large beads, opaque.—A series of spherical wire-wound opaque blue beads are similar in color and form and vary only in size.

(5) These were from 11 to 13 mm. in diameter and were found in features 3, 13, and 15 (Nos. 202, 203, 234, and 312) (pl. 65, *c*).

(21) These specimens were from 6 to 7 mm. in diameter. Nineteen of them were found in F–3, one in F–14, and one in F–20 (Nos. 60, 205, and 313) (pl. 65, *c*).

(9) These specimens average 5 mm. in diameter. All were found in F–3 (No. 314) (pl. 65, *c*).

A series of white globular beads was found in three sizes.

(6) These were from 5 to 7 mm. in diameter. All were from F–3 (No. 315) (pl. 65, *d*).

(10) These beads averaged 5 mm. in diameter and 6 mm. in length. All of them were found in F–3 (No. 316) (pl. 65, *d*).

(1) This specimen was 4 mm. in diameter. It was found in F–19 (No. 240) (pl. 65, *d*).

Two oblate spheroidal beads of opaque materials were found.

(1) This specimen is made of a white glass that has a dull finish, but on a broken portion it is glossy. It is 7 mm. in diameter and resembles the barrel beads described below. It was found in F–3 (No. 318) (pl. 64, *r*).

(1) This specimen is green; it is 6 mm. in diameter and was found in F–3 (No. 317) (pl. 64, *s*).

Barrel beads are present in white, blue green, dark green, pale green, and bright blue colors. All of the 20 barrel beads from the site were found in F–3. Examples of these are shown in plate 64, *t*.

(14) White barrel beads were the most numerous. These measured 5 to 6 mm. in diameter and 8 mm. in length (No. 319) (pl. 64, *t*).

(2) Blue green specimens are 4 mm. in diameter and 8 mm. in length (No. 319) (pl. 64, *t*).

(2) These dark-green specimens are heavily fired, and this may not represent their actual colors. These measured 4 mm. in diameter and 7 mm. in length (No. 319) (pl. 64, *t*).

(1) This pale-green specimen is 5 mm. in diameter and 8 mm. in length (No. 319).

(1) This bright-blue specimen is 5 mm. in diameter and 8 mm. in length (No. 319).

Seven cylindrical or canon beads were found. A dull white, a pearl white, and green are the colors represented. All of these specimens were recovered from F–3. These beads were made by breaking off fragments of hollow-glass or glass-frit tubes. In most cases, the ends were then polished smooth.

(1) One-half of a white tubular or canon bead; it is 13 mm. long and 8 mm. in diameter. The specimen is formed of an opaque white glass frit. It was recovered by Fred La Rocque in the general area (F–66) of the post (pl. 64, *n*).

(1) This dull white canon bead is 5 mm. in diameter and 14 mm. in length; it has a dull porcelain appearance (No. 320) (pl. 64, *o*).

(2) These pearl-white beads are 3 mm. in diameter and 4 mm. in length. They have a glossy pearllike lustre about them (No. 320) (pl. 64, *q*).

(3) These green specimens appear to have been made from the same "stick" of glass. They are from 3 to 4 mm. in diameter and 8 to 10 mm. in length (No. 320) (pl. 64, *p*).

Seed beads.—These are generally oblate spheroidal or subcylindrical in form. Gradations in size are present, but these beads seem to be grouped around three modes. Colors present were blue, white, black, and green.

Blue seed beads are by far the most common. These range in diameter from 2 to 3 mm. Many are discolored, but a dull light blue predominates. When dry, they are opaque, but when moistened, all of them turn a pale blue green and become translucent. Approximately 880 of them were found in F–3, the log-cabin area of the post (No. 321) (pl. 65, *b*). About 5,000 of them were found with F–52, an infant burial.

White seed beads were the next most common. All of them have a dull pearllike luster. These graded in size from 2 to 4 mm. in diameter. Approximately 60 of the smallest size were present (No. 322) (pl. 64, *b*). The middle-size beads, which were 3 mm. in diameter, numbered approximately 480 (No. 323) (pl. 65, *b*). The largest size were 4 mm. in diameter; about 150 of them were present (No. 324) (pl. 65, *b*).

Miscellaneous colors were represented by two black seed beads, one dark-green, and one light-green specimens. All of these were 3 mm. in diameter. They were found in F–3 (No. 325).

Metal beads.—Two cast copper beads with attached wire hooks have a hole through them at right angles to the wire hook. They are 6 mm. in diameter. One was found in F–3 (No. 326) (pl. 64, *u*). The other was recovered by Fred La Rocque in F–66. Color frequencies are shown in the following tabulation:

Color of bead	Large and medium	Seed	Total
Blue	101	800	901
White	82	694	776
Green	13	2	15
Amber	2	2	4
Black	1	2	3
Total			1,699

About 5,000 blue seed beads were found with Feature 52, an infant burial. Since they were placed with the burial for a particular reason they are not included in the sample from other features in the post. The beads from other features within the post represent a random sample, and were probably lost by employees at the post.

Adding the blue seed beads from the burial to the other blue beads gives this color a total of 5,901, making a grand total of 6,699 beads of all sizes and colors.

Bell (1) (pl. 60, n).—One small brass bell formed of two hemispheres of thin sheet brass joined together by rolling of the joint and possibly solder. On the rear of the bell is a small brass loop 1/8 inch in diameter that was used for attachment to clothing. The bell has two holes 3/32 inch in diameter that are 5/16 inch apart. They are joined by a thin slit in the brass. The bell is 19/32 inch in diameter and 3/8 inch in height. A small round piece of iron (?) is in place within the bell. It served as a clapper (Fred La Rocque).

Brass arrowpoint (1) (pl. 60, m).—This is a triangular point with straight sides and a small rectangular stem projecting from a straight base. Length is 3.5 cm.; width, 2.0 cm.; thickness, 0.5 mm. The specimen is made from stock sheet brass or a brass kettle; the chisel marks that formed it show clearly near the stem. The blade was sharpened with a file or whetstone (No. 29).

Gold braid (?).—A small number of matted brass strips were recovered. These are probably the so-called "gold braid" and hence a trade item (No. 41).

Shale and catlinite pipes (26 fragments).—Only one moderately complete specimen is made of catlinite. It has a circular form and tapers toward the base. It is elaborately grooved, probably for the inclusion of lead inlays, and has a tapering orifice (pl. 64, *b*) (Nos. 253 and S. I. 22).

The base of a tapered and grooved catlinite pipe is also present. It may belong to the specimen discussed immediately above, though its styling is different (No. 91). Still another catlinite pipe fragment was found; it has a circular outline, but has one flat side. It is apparently from the stem portion of a pipe, as the hole through it is not tapered (No. 254).

Two other portions of catlinite were recovered. One specimen is square (No. 93), and the other is wedge shaped (No. 224). They bear marks of sawing and are probably materials left over from the manufacture of pipes.

Nine shale pipes are roughly square, though often they have rounded corners. Only one of these fragments shows any signs of incising or other decoration; this consists of a file mark across the top of the bowl. All of the shale specimens are apparently from the common elbow-type pipe.

One specimen is short and obviously incomplete. It is probably from a short, squat pipe on the order of the rectangular bowled clay pipes (No. 85). The shale pipe fragments with roughly square bows range in width from ¾ to 1 inch and 1¼ to 3¼ inches in length (Nos. 84, 88, S.I. 38, 156, 198, 221, 222, 223, and 244) (pl. 64, *a*).

Portions of five shale pipes with round bowls are present. Only one of these is large enough to give much of an idea of their forms. It has a tapering bowl, and could have had a prow. It is 1¼ inches in diameter and 2½ inches in height (pl. 64, *c*) (No. 87). (Nos. S.I. 39, 90, 157, 268).

Another pipe has a bowl shaped like that of the TD clay pipes (No. 194). A different fragment bears a small spur; it possibly was associated with the TD bowl (S.I. 25).

A single octagonal bowl of gray shale tapers near the base. Diameter is 1¼ inches; height, 3⅜ inches. Two grooves encircle the bowl below the orifice (S.I. 22).

A tapered prow with a rounded end was recovered but cannot be definitely associated with any of the bowls (No. 145).

A few general statements can be made about the manufacture of these pipes. The work was obviously done with metal tools such as drills and files. The pipe blanks were apparently blocked out with saws and files. Holes were then drilled in them with cylindrical metal drills. If all went well up to this point, these holes were enlarged with a tapered drill. Only one definite stem portion was found; the hole in it was not tapered.

Thirteen of the bowl fragments bore cylindrical holes. These pipes apparently were discarded before they had been formed to the point that tapered reamers were used on them. Three drill sizes were found to have been used on them. These were one of ½ inch, six of ¼ inch, and six of 5/16 inch.

In most of these specimens, the tapered drill was used to enlarge the original holes in the bowls to a depth of ½ to 1¼ inches.

Only two of the pipe bowls showed any signs of usage; all of the others were apparently broken while being made.

Approximately 20 pipes are represented by these fragments. Local materials were largely used in the manufacture of these pipes. Out of a total of 26 fragments, only 5 were of catlinite, which most probably were brought in by personnel at the post. The remaining fragments were of local red and gray shales.

OBJECTS OF NATIVE MANUFACTURE

Arrowpoints (*2*).—Neither of these points is complete enough so that its form may be determined. A midsection of one point is of Knife River flint (No. 81). A gray chert specimen with the base missing is triangular, with straight sides and two side notches. Maximum length is 2.5 cm.; width, 1.6 cm.; thickness, 4.0 mm. (No. 82).

End scrapers (3).—These specimens are snub-nosed scrapers. A steep working edge is on the end opposite to the bulb of percussion. The form is plano-convex, with retouch along the sides. Material is Knife River flint (chalcedony). They average 3 cm. in length and 2.2 cm. at their widest points (Nos. 77–79).

Modified flakes (2).—Two flakes of Knife River flint have some secondary retouch along one or more edges, with some evidence of use retouch (Nos. 80, 83).

Choppers (2).—One of these is complete; length, 23.5 cm.; width, 13.0 cm.; thickness, 1.5 cm. It is rectangular in outline, with parallel sides and rounded corners. A side notch is on both sides of the blade, and one end is chipped and battered. Material is granite (No. 192) (fig. 24, *d*). The other specimen is broken, but resembles the preceding item. Three sides are chipped and battered; the fourth is broken. Material is gray schist (S.I. 31).

Grooved mauls (4).—Three specimens are three-quarter grooved, and one large fragment bears a groove, but is not complete enough to show the extent of the groove (No. 8). Two specimens are grooved at the midpoint, and vary in length from 9.0 to 10.4 cm., and between 7.0 and 8.0 cm. in width (Nos. 53–54) (fig. 24, *b*). A larger specimen is 10.7 cm. long and 8.5 cm. wide, and bears a groove two-thirds of the distance from one end. Material is granite (No. 219).

Hammerstones (3).—These are rounded river cobbles. Two of them are circular; the other is ovoid. All are battered on one or more sides. They are of granite and quartzite (Nos. 50, 59, and 185).

Whetstones and abrading stones (17).—Two rounded scoria fragments have worn surfaces and are similar to scoria abraders found in native village sites along the Missouri River (Nos. 9, 242). Seven pieces of sandstone and shale in flat, but irregular form, have abraded surfaces (Nos. 2, 5, 6, 7, 10, 189, and 190). A piece of petrified wood (No. 58), a piece of granite (No. 52), and six pieces of rounded, concretionary sandstone were apparently also used for whetstones (Nos. 4, 49, 51, 55, 56, and 245) (pl. 64, *d*).

Pottery sherds (2).—These are body sherds 5 mm. thick, tempered with grit. Both specimens show the impressions of a grooved paddle. The stamps are partially obliterated by smoothing. Color is dark gray and black (No. 122).

Miscellaneous baked clay items (3).—An elongated specimen of baked clay preserves the impressions of grass stems; this is probably a piece of chinking from a stick chimney or one of the log cabins (No. 191). A circular ball of baked clay is ½ inch in diameter (No. 208). A thin oval object of baked clay has a surface that has impressions

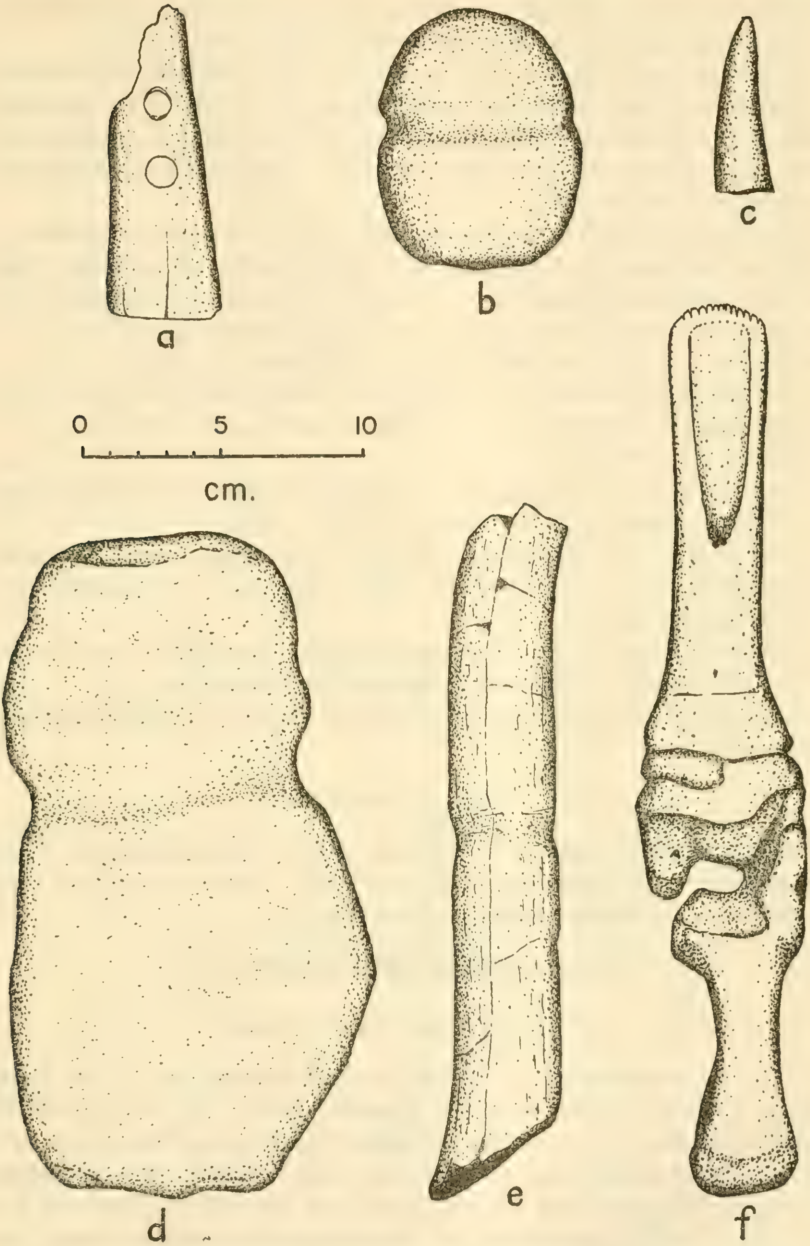

FIGURE 24.—Objects of native manufacture, *a*, Arrow-shaft wrench, No. 96. *b*, Full grooved maul, No. 54. *c*, Antler tip, No. 232. *d*, Chopper, No. 192. *e*, Fleshing tool (?), No. 220. *f*, Elk metapodial flesher, Nos. 154–155.

similar to simple stamps. This last specimen is about the size and shape of the popular native "gamestones" (No. 235).

Elk metapodial flesher (*1*) (*fig. 24, f*).—It is formed of the articulated metapodial, calcaneus, and astragalus of elk. The proximal end of the metapodial was reduced in diameter, and a chisel-shaped end bears 13 serrations or small notches. The specimen is 32.0 cm. in length (Nos. 154–155).

Fleshing tool (*?*) (*1*) (*fig. 24, e*).—This is a straight section of charred elk antler 24.5 cm. long and 3.8 cm. thick. A shallow groove is cut around the midsection. Though not complete, this specimen is suggestive of the elk antler "beamers" or hide scrapers used by Plains tribes, among which are the Mandan and Hidatsa (No. 220).

Arrow shaft wrench (*1*) (*fig. 24, c*).—This is made of the rib of a large animal, probably bison, and has two perforations 1.0 cm. in diameter (No. 96).

Bone bead (*1*).—The long bone of a small mammal, 2.1 cm. long and 4.0 mm. in diameter; it has square ends (S.I. 32).

Antler tips (*2*) (*fig. 24, c*).—These are cut square from the antler, presumably with a metal blade. Both tips are worn and polished (Nos. 214 and 232).

Antler fragment (*1*).—This small cylinder was taken from near the point of an antler. One end has a small hole in it (No. 231).

The distribution of the artifacts found in Kipp's Post is shown in figure 25.

FAUNAL REMAINS

A considerable amount of animal remains was recovered. These remains included bison, deer, fish, and bird. Information about them is presented in tabular form in Appendix 3.

CONCLUSIONS AND DISCUSSION

THE SITE AND STRUCTURES

The site was situated on the left or north bank of the White Earth River a short distance from the Missouri River. It was apparently built apart from any permanent Indian villages, as evidences of earth lodges or of earth-lodge villages were not found in the immediate vicinity. The post was less elaborate than either Fort Berthold I or Fort Berthold II, and contained fewer structures and accessory features. It was probably built for a short-range fur-trade program.

The first terrace of the Missouri and White Earth Rivers is about 300 yards to the south, and at the time the post was in operation the banks of the White Earth River must have been near the terrace. Tradition states that boats landed near the post when it was occupied.

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ARTIFACTS	FEATURES																					TOTALS
	1	3	4	6	7	8	9	13	14	15	16	19	20	21	49	50	52	55	60	61	66	
DEFENCE																						
Cannon fragments		2	1							1			6								1	11
HUNTING AND OTHER SUBSISTENCE ACTIVITIES																						
Flintlock hammer																					1	1
Gun flints		15	1				1	1		1	1		1							1	3	25
Gun worms		1																			1	2
Ramrod (?)		1																				1
Spherical lead balls		12							1	1						6					3	23
Sprews		2																			1	3
Shot		189					1															190
Melted lead fragments		X			X		X				X	X										X
Harpoon							1															1
Seeds		X							X		X											X
HOUSING AND CONSTRUCTION MATERIALS																						
Nails	X	X	X		X	X	X	X	X	X			X				X		X	X	X	90
Spikes									1												1	2
Staples																					2	2
Door hook (?)		1																				1
Door pintle (?)		1																				1
Lock fragment			1																			1
Bolt catch		1																				1
Window glass			X																			X
Chinking	X	X		X		X		X			X			X				X		X	X	X
HOUSEHOLD GOODS, PERSONAL POSSESSIONS, TOOLS AND EQUIPMENT																						
Cup		X																				X
Cup or saucer		X																				X
Dishes	X	X	X			X							X									X
Mirror glass			X																			X
Tumbler fragment	X																					X
Bottles			X						X				X								X	X
Thimble		1																				1
Straight pins		3																				3
Finger rings		1							1													2
Bangles		2																				2
Ear ornaments		5																				5
Clay pipe fragments	2	100	12	1	5	4		7	9	4		1	6	8					5	2		165
Turned bone letter seal handle								1														1
Sealing wax stick (?)													1									1
Doll legs		1																				1
Double-pointed awl																					1	1
File		1																				1
Whetstones		1						2														3
Dressed piece of limestone																					1	1
Brass wire		1																			2	3
Steel wire		1																				1
Sheet brass strips		1			2																	3
Eyed bolts		2																				2
Chain link		1																				1
Horse bit (?)			1																			1
Tube		1																				1
Staple																					1	1
Lead bale seal		1																				1
Circular wooden object											1											1
Rope													1									1
Birch bark		1				1																2
CLOTHING AND FOOTWEAR																						
Buttons		22						2														24
Cloth		2																				2
Shoes						2			1													3
TRADE GOODS																						
Beads	20	967	3				7	16	13	3		1	21				5000				X	6700
Bell																					1	1
Brass arrowpoint		1																				1
Gold braid (?)		X																				X
Catlinite and shale pipe fragments		7	1	2				2		4			1	2						1	6	26
OBJECTS OF NATIVE MANUFACTURE																						
Arrowpoints		2																				2
End scrapers		3																				3
Modified flakes		2																				2
Choppers								1													1	2
Grooved mauls		3								1												4
Hammerstones		2						1														3
Whetstones and abrading stones		5						2					2		1						7	17
Pottery sherds																					2	2
Miscellaneous baked clay items								1	1		1											3
Elk metapodial flesher				1																		1
Fleshing tool (?)										1												1
Arrow shaft wrench		1																				1
Bone bead																					1	1
Antler tips									1	1												2
Antler fragment										1												1
FAUNAL REMAINS DISCARDED IN THE FIELD	X	X	X	X		X		X	X	X			X		X			X		X	X	X

FIGURE 25.—Distribution of the artifacts found in Kipp's Post.

The post was well located with respect to fur-trading opportunities, as it was situated at the mouth of the White Earth valley, which was formerly rich in game and fur animals. This river drains into the Missouri from the north, and provided an easy travel route for Indian groups as far north as present-day Canada. The Assiniboin were at that time ranging north of the site, and it is recorded that the site was built expressly for their trade. The scanty records available (Breeling, 1954; Wied-Neuwied, 1906, vol. 23, p. 228) indicate that they did trade at the site. At the time of its construction, the nearest trading post was apparently at the Mandan villages near the Knife River, a distance of about 80 miles. Thus located in an area relatively free of competition, it would be reasonable to suspect that it was a profitable business venture.

MAJOR ARCHITECTURAL DETAILS

The palisade appears to have been oriented with respect to topography and not expressly with compass direction. The south wall of the palisade faces slightly west of south, and is approximately parallel to the edge of the terrace upon which it was constructed.

The post enclosure was a simple quadrilateral structure, approximately square, and 96 feet on a side. The palisade walls were formed by cottonwood posts or logs set upright in a narrow trench. The remains of 673 posts, some of which had been split in half, were found by excavation. A range of four buildings faced the entrance on the north side of the enclosure. The placement of these buildings, which were near and just under the log palisade, afforded a windbreak from the prevailing northwest winds and also afforded winter warmth from the low angle, unobstructed sunlight.

A quadrilateral bastion or blockhouse projected about 5 feet from the northeast corner of the palisade, and was an extension of the palisade trench. The walls of the bastion consisted of vertical posts, as in the palisade walls. One might speculate that some structure was mounted above the vertical wall timbers, but no evidence of any such structure was found. The southwest corner of the palisade revealed no bastion, but fired-clay chinking found here suggests some elaboration of the palisade. Enfilade fire along the north and east walls would have been afforded by the bastion, and it is possible that some defensive structure also existed in the southeast corner, although no evidence was found to indicate that such was the case.

The entrance to the stockade was in the middle of the southern palisade line, facing the Missouri and White Earth Rivers. It was indicated by a 9½-foot gap in the palisade trench line. Two rather heavy posts were found in the palisade trench on either side of the entrance and gates were presumably attached to these posts. The gates may have been secured in an open position by two posts found inside the enclosure a short distance from each side of the entrance.

Substantial structures included a range of three buildings, presumably log cabins. The fired-clay chinking at the site showed that round peeled logs had been used in the construction, and the quantity of the chinking suggested extensive use of that material. The outlines of the three log cabins were suggested by six north-south sills that were surrounded by fired-clay chinking. Those six timbers outlined three rectangular areas approximately 16 feet north and south, and 18 feet east and west. Floor joists were found between these sills, and hewn-plank flooring covered the joists. Further structural evidence was absent, but a few details may be inferred from some of the artifacts.

Some of the buildings had windows, as several fragments of thin window glass were found. Numerous nails were found in the fill associated with the structures, some of which were driven into the charred flooring. A door bolt catch and a portion of a lock were possibly fitted on the doors of a kitchen, residence, or storehouse.

Feature 62, the westernmost log-cabin area, was probably the kitchen. It contained many fragmented animal bones, broken dishes, plates and cups, and bits of melted lead. A chinked stick chimney may be represented by a fireplace with four associated posts. A trench filled with ash, burned earth and other refuse was located directly north of this cabin. It was a kitchen refuse depository.

Three buildings, often close together in fur-trade posts, were the kitchen, a storehouse, and the residence of the trader or bourgeois. The kitchen is tentatively identified as Feature 62. The central log cabin, Feature 63, is tentatively identified as a residence. The eastern log cabin, Feature 64, was probably a storehouse. The fourth structure in this series, Feature 65, appears to have been a shed for the storage of equipment and perhaps furs. There is mention of Kipp's having wintered at the site, but contemporary sources mention no further personnel by name.

Maximilian stated that the site was abandoned in 1829, but there is no record known of the post's destruction by fire, as shown by the excavations. The site may have been burned after its abandonment by the occupants to prevent competitors or local Indians from using its facilities. It could also have been burned by the Indians themselves.

WHITE OBJECT MATERIALS

The various white object materials found within the palisade, and principally within the log-cabin area and the various pits, give clues to life at this post.

The cannon was probably intended for defense or at least to impress the local Indians with its destructive force. Many examples of the use of cannon elsewhere to overawe Indians could be cited. This particular cannon was small and may have been mounted on a heavy block of wood with a swivel, or possibly on a small 2-wheeled carriage as the "cannon carriage bolt" would indicate.

The remains of firearms are scanty; indeed, the only definite gun part is the hammer from a flintlock rifle of a pattern manufactured from 1803 to 1807 for the use of the U.S. Army. Rifles of this type were carried by the Lewis and Clark Expedition. At least one rifle of this form was in use at Kipp's Post.

A study of the gun flints shows four sizes intended for different weapons. Horse pistols or trade guns with small locks; rifles or fowling pieces with small locks; pocket pistols or rifles with small locks; and carbines or trade guns with small locks. Musket flints are absent from this sample. Perhaps none were in use here or they were traded only to Indians. At least four different lock sizes, indicating as many guns, were used here.

An analysis of the perfect spherical rifle balls reveals that five sizes of bullet molds were employed, ranging from .475 inch to .584 inch. Here is evidence that at least five individual weapons were probably in use, since it was customary for each gun to have its own individual mold. The presence of lead shot indicates that fowling pieces or smooth bore guns were used, as does the one size of gun flint suitable for this weapon. This in turn indicates that waterfowl and local birds such as the prairie chicken were probably hunted, a supposition that is confirmed by the avian remains found within Feature 20, the kitchen refuse area.

Three different bullet molds are represented by sprews from the one-, two-, and four-cavity molds, although the comparison of the individual lead balls shows that at least five different-sized molds were used. The lead fragments found throughout the log-cabin area and within Feature 9 prove that balls for individual weapons were made at the post.

The harpoon raises the possibility that muskrats, beaver, and perhaps large fish were speared, though it is possible that this was an item for the fur trade.

A considerable variety of dishes, cups, and saucers, are represented by fragments; a portion of a water glass or tumbler and possibly medicine bottles are also present. Mirror glass adds to the impression that a certain amount of luxury was available at the post.

Sewing materials such as the thimble and awl indicate that the making of clothing or its repair went on here, though these items again were also probably traded. The straight pins were possibly used in the making of clothing. The cloth and numerous buttons found were probably from commercial clothing brought from manufacturing centers, though the buttons could also have been used on leather clothing made by Indian women.

Finger rings, bangles, ear ornaments, and beads were probably worn by the native women who lived with the traders. However, such items were also traded. The doll legs could also have been from the doll of one of the children of a post employee or an Indian child.

Clay pipes were found in large numbers within the post in a broken condition and though they were traded to the Indians, most of them were probably used by the personnel of the post. The turned-bone letter-seal handle reveals something of the operations of the post; perhaps Kipp himself used it for sealing correspondence.

The files and whetstones are evidence that metal was sharpened here, as one would assume, and the sawed butts of the posts in Features 46, 47, and 48 reveal that saws were present, although none were recovered. Axes and knives surely must have been used also, though none were found. Lead bale seals were probably used on bales of such trade goods as blankets brought up to the post, perhaps also on bundles of furs being sent downstream.

The large numbers of catlinite and shale pipe fragments indicate that pipes were probably manufactured here with metal tools such as files, saws, braces, and drills. Undoubtedly they were for the fur trade as they are of styles little used by white men. Clay pipes were light, cheap, convenient, and more practical for personal use.

The presumed horse bit is the only transportation item present. It would indeed be unusual if no horses were used here, but there is no positive proof that they were.

TRADE GOODS

Kipp is said to have taken a fine selection of trade goods to this site in the late fall of 1826. At least a portion of it was brought from St. Louis by Tilton in November of 1826. Other goods may have been transported from the Columbia Fur Company's base on Lake Traverse at the headwaters of the Red River of the North (Wied-Neuwied, 1906, vol. 23, pp. 226–228). The following items represent some of the trade material recovered:

Glass beads in a considerable variety of colors, sizes, and forms; sheet brass from which arrowpoints, bracelets, and bangles may have been made; straight brass pins; a brass thimble; a brass bell; clay; catlinite; and shale pipes; gun flints; gun worms; finger rings; ear ornaments; an awl; brass wire; gold braid (?); and cloth.

Objects of trade known from the literature, but absent in the excavations include knives, kettles, firearms, gunpowder, bar lead, and bullet molds.

ARTIFACT FITS BY FEATURES

A study was made of the various broken white object materials which fitted together and of their sources in the different features. This demonstrated contemporaneity between some features. These are listed below:

Cannon fragments: Features 3, 4, 15, 20, and 66. Clay-pipe fragments: Features 3 and 8; 3 and 21; 7 and 15. Whetstone fragments: Features 3 and 13. Dish fragments: Features 4 and 12.

Feature 3, the log cabin area, is associated with Features 4, 8, 13, 15, 20, 21, and 66, on the basis of these demonstrated fits of broken artifacts. Associated with each other are Features 4 and 12, and 7 and 15.

OBJECTS OF NATIVE MANUFACTURE

Permanent earth-lodge villages were absent in the immediate vicinity, and the native artifacts found may represent objects which were lost at temporary campsites, before, during, or after the site was occupied by whites. Strictly native artifacts are:

Two chipped-flint arrowpoints; three chipped-flint end scrapers; two modified flakes; a serrated metapodial fleshing tool; a perforated arrow-shaft wrench; four grooved mauls; rectangular chopping tools of stone; hammerstones; pottery; whetstones and abrading stones; antler tines; and a fleshing tool.

Aside from the perforated arrow-shaft wrench and the arrow points, each of these specimens was used in the preparation of hides and food, and possibly are attributable to visits of Indians to the site for trade. Contemporaneity of most of these artifacts and the post is certain, since many of them were found in the storage pits within the palisade enclosure.

A study of the distribution of 45 "native" artifacts such as mauls, cylindrical sandstone whetstones, and chipped-flint artifacts was made. Eighteen items were found in F–3, the log-cabin area; 7 in F–13, a large pit; 9 in F–66, the general area of the post; 4 in F–15; 4 in F–20; and one each in Features 6, 14, and 49.

INFANT BURIAL

The infant buried in Feature 52 may have been the child of one of the employees at the site, since it is unlikely that one of the visiting Indian groups would bury a child inside a white trading post. Most probably it was the child of a post employee and his Indian wife. At this period, no white women were located nearer than the Red River

Settlements. Not until the 1830's, or even later, were white women at Fort Union, the successor to Kipp's Post. An Indian wife, or wives, living at the site would readily account for some of the articles of native manufacture found in the pits inside the enclosure.

A more plausible explanation, however, for the presence of these native artifacts is that Kipp or other employees had Indian women at the post. The material traits of a culture are often surprisingly tenacious, and as the post was located a long distance from the commercial sources of supply, native artifacts would not likely suffer much competition.

COMPARISON WITH OTHER FUR TRADE POSTS

This site was smaller than other comparable fur trade post locations for which data are available, and the structures were less numerous. The presence of a single bastion, rather than paired blockhouses, is also at variance. Two features at Kipp's were not found at Fort Berthold I or Fort Berthold II. These were:

(1) Long shallow trenches parallel to the north and east palisade walls, for which no function can be demonstrated.

(2) Deep, subrectangular pits with steep walls and rounded or flat bottoms and a low ridge of earth across their short axes. These were floored with boards, and probably functioned as storage pits.

Several features were absent that were present in the posts of Fort Berthold I and Fort Berthold II, both of which were later in time and occupied for a longer period. They include deep rectangular cellars and latrine pits (Smith and Woolworth, 1954). Latrines would have been convenient, particularly in winter, but if such features were used they must have been located outside the palisade walls, since no evidence for them was found within the enclosure.

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APPENDIX 1

LIST OF FEATURES AT SITE 32MN1

F–1. The palisade or stockade trench, containing the butts of 673 cottonwood posts.

F–2. The bastion in the northeastern corner of the post.

F–3. The general area in the northern portion of the post enclosure where the log cabins were situated.

F–4. A large pit with an earth septum in the northern half of the enclosure. 11 feet long, 6 feet wide, and 4.2 feet deep.

F–5. A portion of a cannon base found in F–4.

F–6. A large pit with an earth septum in the eastern portion of the enclosure. 12.5 feet long, 5–7 feet wide, and 3–4.3 feet deep.

F–7. A large shallow pit without septum in the northern portion of the enclosure. 8.7 feet long, 4.8 feet wide, and 0.7–1.5 feet deep.

F–8. A small pit with a square outline adjacent to Features 63 and 64. 2.8 feet on a side, and 2.5 feet deep.

F–9. A small pit with an oval outline adjacent to Feature 19. 1.5 feet by 1.9 feet surface dimensions, and 1.6 feet deep.

F–10. A small pit with a pentagonal outline adjacent to Feature 19. 2.2 feet wide, 2.4 feet long, and 1.0 foot deep.

F–11. A fireplace adjacent to Feature 21. 3.0 feet in diameter.

F–12. A large irregular pit within the bastion (F–2). 19.0 feet long, 7.0 feet wide, and 1.6 feet deep at deepest point.

F–13. A large pit with a septum in the western portion of the enclosure. 13.9 feet long, 7.9 feet wide, and 4.2 feet deep.

F–14. A large pit with a septum beneath the flooring of F–63, a log cabin. 7.1 feet long, 4.1 feet wide, and 2.2 feet deep.

F–15. A large pit without a septum near the western palisade trench line. 9.5 feet long, 8.3 feet wide, and 1.4 feet deep.

F–16. A probable fireplace under the flooring of F–63, a log cabin. Ca. 2.5 feet in diameter.

F–17. A long rectangular shallow trench in the southeastern corner of the post enclosure and parallel to the palisade trench. 11 feet long, 1.3–1.7 feet wide, and 0.8 foot deep.

F–18. A small shallow pit adjacent to F–22. 1.3 feet in diameter and 0.3 foot deep. Probably used for the smoke tanning of hides.

F–19. A fireplace adjacent to the eastern portion of the palisade trench. 2.5 feet in diameter, and 0.4 foot deep.

F–20. A long rectangular trench between the log cabin area (F–3) and the northern palisade trench line. This trench had served as a refuse dump for the kitchen. A portion of it was undercut. 24 feet long, 2 feet wide, and 2–2.5 feet deep.

F–21. A shallow rectangular trench in the eastern portion of the enclosure and parallel to the palisade trench line. 19 feet long, 1.6 feet wide, and 0.5–1.0 foot deep.

F–22. A short trench which contained the butts of a series of cottonwood posts. It was at the southwestern corner of F–62, a log cabin. It had apparently served as a screen for this cabin. 10.2 feet long, 0.7 foot wide, and 1.4 feet deep.

F–23. A shallow pit which contained charred wood and bark. It was adjacent to F–22. Apparently used for the smoke tanning of hides. 0.9 foot diameter, 0.2 foot deep.

F–24. A fireplace in the presumed kitchen, F–62. It was surrounded by four posts in the form of a square; these presumably represent the remains of a wattle-and-daub stick chimney. 3 feet in diameter, 0.5 foot deep.

F–25. A shallow pit which contained charcoal. It was located in the west-central portion of the post enclosure, and probably served as a place for the smoke tanning of hides. 0.7 foot in diameter and 0.1 foot deep.

F–26. A shallow pit which contained charcoal. It was located in the southeastern portion of the post enclosure adjacent to F–17. It probably was used in the smoke tanning of hides. 0.8 foot in diameter and 0.1 foot deep.

F–27. A shallow pit which contained charcoal. It was located in the southwestern portion of the post enclosure and probably was used in the smoke tanning of hides. 1.0 foot diameter, and 0.2 foot deep.

F–28. A rectangular pit which held a small cottonwood post. It is adjacent to F–29, in the southwestern portion of the post enclosure. Surface dimensions: 1.7 feet x 2.3 feet, and 2.4 feet deep.

F–29. A rectangular post mold filled with two stones and charcoal. It was adjacent to F–28. 1.1 feet in diameter and 0.8 foot deep.

F–30. A square pit which held a small charred post. It was located immediately inside the entrance to the post. 0.8 foot on a side and 1 foot deep. The post was 0.5 foot in diameter.

F–31 A round post hole adjacent to the entrance. 0.7 foot in diameter and 0.5 foot deep.

F–32. A square pit which contained a round post mold. It was adjacent to the entrance. 0.8 foot diameter, 1.4 feet deep; the post was 0.7 foot in diameter.

F–33. A round post hole adjacent to the entrance. 0.5 foot diameter, 1 foot deep.

F–34. A circular pit with its base lined with charcoal. It was probably used for the smoke tanning of hides. It was located in the southeastern corner of the post enclosure. 1.5 feet diameter, 1 foot deep.

F–35. A square pit containing a round post mold. It was located in the southeastern corner of the enclosure adjacent to F–53. 1 foot square, 1.4 feet deep; the post was 0.45 foot in diameter.

F–36. A square pit containing a rotted post butt. It was located in the southeastern corner of the enclosure. 1.1 feet square, 1.3 feet deep; the post was 0.6 foot in diameter.

F–37. A circular pit filled with charcoal. It was located in the southwestern corner of the enclosure and was probably used for the smoke tanning of hides. 0.5 foot diameter and 0.1 foot deep.

F–38. A circular posthole which contained a rotted post. It was located in the southwestern portion of the post. 0.5 foot diameter and 0.6 foot deep.

F–39. A circular fireplace about 1.5 feet in diameter. It was in the southwestern portion of the enclosure.

F–40. A square pit which contained a round, rotted cottonwood post butt. It was in the southeastern portion of the enclosure. 0.9 foot on a side, 1 foot deep; the post was 0.7 foot in diameter.

F–41. A round hole 0.8 foot in diameter and 0.5 foot in depth. It contained fragmented chinking and pieces of wood. It was probably not a post; located near the eastern palisade wall.

F–42. A round hole 0.7 foot in diameter and 0.7 foot deep. It contained soft earth fill. Adjacent to F–19.

F–43. A round hole 0.4 foot in diameter and 0.5 foot deep. It contained soft earth fill. Adjacent to F–19.

F–44. A post mold 0.25 foot in diameter and 0.6 deep. It contained rotted cottonwood. Adjacent to F–11.

F–45. A basin-shaped circular pit containing charcoal; it was probably used for the smoke tanning of hides. Located in the eastern portion of the enclosure and adjacent to Features 9 and 19. 1.4 feet diameter and 0.6 foot deep.

F–46. A square pit containing a cottonwood post 0.5 foot in diameter and 1.2 feet deep. This is one of the supports for a shed, F–65; it is associated with Features 47 and 48. The pit is 1 foot square and 1.2 feet deep.

F–47. A square pit containing a cottonwood post 0.6 foot in diameter and 2.0 feet deep. This is one of the supports for a shed, F–65, in the northeastern corner of the enclosure. Associated with Features 46 and 48. The pit is 1.3 feet square and 2.0 feet deep.

F–48. A square pit containing a cottonwood post 0.6 foot in diameter and 1.1 feet deep. This is one of the supports for a shed, F–65, in the northeastern corner of the enclosure. Associated with Features 46 and 47. The pit is 0.8 foot square and 1.1 feet deep.

F–49. A rectangular pit intrusive on Feature 15. It contained a post butt 0.6 foot in diameter and 2.5 feet deep. The pit also contained mixed earth and broken animal-bone fragments; it measured 2.7 x 2 feet and 2.5 feet deep.

F–50. A rectangular pit containing charred wood and 6 lead rifle balls. This pit was associated with Feature 65, a shed. The pit measures 1.4 feet x 2.0 feet and is 1.0 foot deep.

F–51. A rectangular trench 3.8 feet long; 1.6 feet deep and 0.5 foot wide. Apparently a series of small posts were once in this trench as bits of rotted wood were found here. This feature is associated with Feature 65, a shed in the northeastern corner of the post enclosure.

F–52. A rectangular trench abutting on the interior of the southeastern corner of the palisade. The trench is 2.5 feet long, 1.3 feet wide and 1.2 feet deep. This feature contained the burial of an infant in what had apparently been a rectangular wooden box.

F–53. A rectangular trench abutting on the interior of the southeastern portion of the palisade. The trench is 4.7 feet long, 0.7 foot wide and 1.2 feet deep. It contained a series of 9 small cottonwood posts 0.4 foot in diameter. It is possible that this feature was a hitching post or stall for horses.

F–54. A rectangular trench abutting on the interior of the palisade trench in the western portion of the enclosure. The trench was 3.6 feet long, .75 foot wide, and 1 foot deep. No post butts were observed in it.

F–55. A rectangular trench 22.5 feet long, 1.7 feet wide and 0.8 foot deep. It was situated parallel to the eastern palisade trench and contained a few miscellaneous artifacts.

F–56. A palisade trench cross section; it was 1.8 feet wide, and 1.8 feet deep. This cross section was made in the center of the western palisade trench line.

F–57. A palisade trench cross section; it was 1.5 feet wide and 1.7 feet deep. This cross section was made in the center of the western half of the southern palisade line.

F–58. A palisade trench cross section; it was 1.4 feet wide and 1.8 feet deep. This cross section was made in the center of the eastern palisade trench line.

F–59. A palisade trench cross section; it was 1.3 feet wide and 1.4 feet deep. This cross section was made in the eastern portion of the bastion.

F–60. An oval pit 10 feet long, 6 feet wide and 4.3 feet deep at its deepest point. This pit had a raised septum of hard earth in its base. It was located in the eastern half of the post enclosure and was adjacent to Features 6 and 7.

F–61. An oval pit 11 feet long, 8 feet wide at its widest point and 1.5 feet deep at its deepest point. This pit is adjacent to Features 4 and 13.

F–62. Western log cabin; located in the northwest corner of the post enclosure. Adjacent to F–63.

F–63. Center log cabin; located between Features 62 and 64.

F–64. Eastern log cabin; adjacent to Features 63 and 65.

F–65. A probable shed; located south of F–64 and in the northeastern corner of the enclosure.

F–66. General area of the interior of the post.

APPENDIX 2

GLAZED EARTHENWARE AND GLASS FROM KIPP'S POST

By C. Malcolm Watkins[1]

Specimen and Feature Nos.	
105, 110, both F–3. 250, F–20.	English green shell-edge earthenware. One of the most popular and enduring of English ceramic products, the shell-edge pattern was introduced by Josiah Wedgewood in the 1770's. By 1790, it was copied widely and had become a principal trade product. It remained so until far into the 19th century. The earlier examples are distinguished by light density of the creamware paste, and by relative thinness (depending upon the particular form of vessel), and by sharp definitions of the pattern. These fragments seem to correspond more with examples found in early 19th-century sites, perhaps around 1815 (pl. 59, *h*).
109, F–3	Chip of English Staffordshire blue transfer-printed white earthenware of about 1820–30. Spode, Wood, Ridgway, and many others engaged in making this extensively exported ware (pl. 59, *g*).
97, 101, both F–3	Fragments of blue transfer-printed Staffordshire tea slop bowl, 1820–30 (pl. 59, *d*, *e*).
153, F–4	Olive-green blown-glass bottle fragment. Probably before 1830. Many American bottle glass factories established after the Revolution were producing thin-walled medicine and camphor bottles. This piece is too small to be conclusive, however.
149, 151, 152, F–4	Plate glass. Quite possibly mirror glass. No dating possible.
120, F–3	Blue transfer-printed Staffordshire earthenware, 1820–1830 (pl. 59, *c*).
127, F–1	From blown, cut-glass tumbler. This style of fine flat-panel cutting on clear glass is found all through the 19th century, at least from about 1825 on.
142, 143, F–4. 216, 217, F–14. 243, 248, F–20. 275, 276, 285, 288, F–66.	Miscellaneous pieces of bottle and window or mirror glass, all distorted from partial fusing in fire. Not diagnostic, except color and thinness may indicate early 19th century or before.
229, 230, both F–15	Probably mirror glass. Thinness suggests early 19th century or earlier.
107, 115, both F–3	Blue transfer-printed Staffordshire earthenware. 1820–30.
113, F–3. 128, 129, F–1. 180, F–8.	English creamware. Late 18th or early 19th century (up to 1820).

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Specimen and Feature Nos.	
107, 112, both F–3	Chips of English white earthenware. Blue cast indicates these are probably from undecorated portions of blue transfer-printed, or blue-painted ware, ca. 1825.
98, 99, 100, 114, all F–3	Blue transfer-printed Staffordshire ware, 1820–30 (pl. 59, *a*).
108, 117, both F–3	Blue and orange hand-painted white earthenware, Staffordshire, 1810–25 (pl. 59, *f*).
F–3, 134–137, F–4. F–12.	Hand-painted blue-decorated, white earthenware, Staffordshire, 1810–25. Enoch Wood was a principal manufacturer of this much-exported ware (pl. 59, *b*).
277, F–66	Rim of late-style blown wine bottle. Probably first quarter of 19th century, although hand-blown wine bottles with this rim treatment continued to be imported all through the century.
148, 150, both F–4	Glass of modern manufacture; probably from milk-bottle base.
106, 111, 116, 118, all F–3.	White earthenware, "crockery" cup fragments. Any time from the period of the Civil War on to the present.
104, 119, both F–3	Pieces of white earthenware, probably Civil War period to end of the century.

APPENDIX 3

FAUNAL REMAINS FROM KIPP'S POST

BIRD BONE*

Species	Feature No.	Individuals represented
Canada goose (*Branta canadensis*)	1, 8, 13, 15, 20	5
Ross's goose (*Chen rossi*)	8	1
Snow goose (*Chen hyperboreus*)	20	2
Mallard (*Anas platyrhynchos*)	4, 8, 13, 15, 20	3
Green-winged teal (*Anas carolinensis*)	13	1
Hooded merganser (*Lophodytes cucullatus*)	13	1
Gadwall (*Anas streperus*)	20	1
Sandhill crane (*Grus canadensis*)	13	1
Franklin's gull (*Larus pipixcan*)	20	1
Ring-billed gull (*Larus delawarensis*)	20	1
Wood ibis (*Mycteria americana*)	8, 20	1
Sharp-tailed grouse (*Pedioecetes phasianellus*)	1, 4, 8, 20	2

*Identified by Dr. Herbert Friedmann, curator, Division of Birds, U.S. National Museum.

Twelve species of birds are represented in this series. Eleven of these are waterfowl. The sole exception is the sharp-tailed grouse or prairie chicken; only two individuals are represented for this species. Eight species of birds were found in F20; five in F8; five in F13; two in F1; two in F4, and two in F15. A minimal total of 20 birds is represented by these remains.

ANIMAL BONE*

Species	Features	Individuals represented
Antelope *(Antilocapra)*	4, 13	1
Antelope or deer	4, 8, 12, 13, 15, 17, 55	2
Badger *(Taxidea)*	4, 15	1
Beaver *(Castor canadensis)*	4, 7, 8, 17, 20, 21, 60, 61	2
Bison *(Bison bison)*	1, 4, 6, 7, 12, 13, 15, 17, 20, 21, 55, 60, 61.	7
Bobcat *(Lynx)*	15	1
Deer *(Odocoileus)*	4, 20	2
Dog *(Canis familiaris)*	1, 12	2
Elk *(Cervus canadensis)*	1, 4, 6, 12, 14, 17, 20, 60	3
Muskrat *(Ondatra)*	4, 13, 15, 20, 21	3
Porcupine *(Erethizon)*	60	1
Prairie dog *(Cynomys)*	6	1
Skunk *(Mephitis)*	4, 20	1

*Identified by Dr. T. E. White, Dinosaur National Monument, National Park Service.

Twelve species of mammals are represented in this series. Although large animals such as bison, elk, deer, antelope, and perhaps beaver were to be expected, as they are frequently mentioned in contemporary accounts, it was of special interest to discover that many smaller animals, not commonly eaten by our own generation, were represented in the faunal remains from the site.

The presence of skunk, muskrat, badger, bobcat, porcupine, dog, and prairie dog bones, mixed in with other kitchen refuse, suggests that the occupants of this trading post were acculturated by their contacts with the Indians. It further suggests the presence of Indian women at the site. In times of game scarcity, of course, smaller animals were probably hunted more than casually. It is also quite possible that some of these small animals were eaten as byproducts of trapping around the trading post.

Bison, antelope, deer, and elk were the largest quantities of animal bone found at the site. The bulk of the animal bones were found in Features 4, 13, and 20. These features obviously were used more extensively than others for kitchen refuse. Eight species of mammals were found in F4; six in F20; five in F15; four in F12, F13, F17, and F60; three in F1, F6, and F21; two in F7, F8, F55, and F61.

FISH BONE*

(All specimens are catfish; most probably of the genus *Ictalurus*.)

Feature No.	
1	8 skull, visceral, and pectoral girdle bones of catfishes.
8	An operculum and articulated hyomandibular and metapterygoid elements of catfishes.
13	7 skull, visceral, and pectoral girdle bones, and 10 vertebrae of catfishes.
15	19 skull, visceral, and pectoral girdle bones of catfishes.
20	11 skull, visceral, and pectoral girdle bones, and 2 vertebrae of catfishes.

It is difficult to arrive at an estimate of the number of catfish represented by these remains. Catfish bones were found in five different features. Hence, an assumption can be made that at least five individual catfish are represented. The actual number of catfish is probably much larger.

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*Identified by Dr. David H. Dunkle, associate curator, Division of Vertebrate Paleontology, U.S. National Museum.

EXPLANATION OF PLATES

Plate 55

Two views of the excavated Kipp's Post. *a*, Toward the Missouri River bluffs. View is northeast. *b*, Toward a former channel of the White Earth River; the channel is marked by the line of trees in the background. The Missouri River is visible as a white line in the background. View is southwest.

Plate 56

Two views of features in Kipp's Post. *a*, Series of log cabin sills and floor joists in Feature 3. View is west. *b*, Feature 4, a large storage pit with an earth septum. Note the remains of the pit flooring. View is east.

Plate 57

Four photographs of portions of the excavated post. *a*, Feature 23, a shallow charcoal-filled pit that was probably used for the smoke tanning of hides. *b*, Feature 52, an infant burial. *c*, Western palisade trench line; a few rotted post butts are visible. View is north. *d*, Feature 57, a cross section of the palisade trench.

Plate 58

Defense, hunting, housing, and construction items. *a*, Flintlock hammer, No. 280. *b*, Gun flint, No. 193. *c*, Gun flint, No. 140. *d*, Lead ball with sprew, No. 22. *e*, Lead ball with sprew removed, No. 21. *f*, Sprew with four nipples from a four-unit bullet mold (owned by Fred La Rocque). *g*, Spiral gun worm, No. 28. *h*, Harpoon head, No. 183. *i*, Lock fragment, No. 147. *j*, Bolt catch, No. 38. *k*, Staple, No. 274.

Plate 59

Household goods (glazed earthenware). *a*, Blue and white saucer, Nos. 98–100, 114. *b*, Blue and white saucer, Nos. 134–137. *c*, Blue and white saucer fragment, No. 120. *d*, Exterior view of saucer fragment, No. 97. *e*, Interior view of saucer fragment, No. 97. *f*, Earthenware sherd with underglazed design, Nos. 108 and 117. *g*, Decorated earthenware fragment, No. 108. *h*, Featherstoneware fragment, No. 105.

Plate 60

Household goods, personal possessions, tools, and equipment. *a*, Turned-bone letter seal handle, No. 204. *b*, Sealing-wax stick (?), No. 247. *c*, Brass thimble, No. 24. *d*, Finger ring with glass set, No. 31. *e*, Front view of ring with glass set, No. 31. *f*, Ear ornaments of white metal, No. 25. *g*, Doll legs, No. 121. *h*, Lead bale seal, front view, No. 26. *i*, Lead bale seal, rear view, No. 26. *j*, Chain link, No. 27. *k*, Double pointed awl, No. 278. *l*, Eyed bolt with nut, No. 27. *m*, Sheet brass arrowpoint, No. 29. *n*, Two views of a brass bell (owned by Fred La Rocque).

Plate 61

Personal possessions (trade clay pipe fragments). *a*, TD pipe bowl, No. 48. *b*, rear of bowl, same specimen, No. 48, note the TD design surrounded by a wreath. *c*, TD pipe bowl, right-hand view of bowl. The letter G is on the spur, No. 225. *d*, Rear of bowl, same specimen, No. 225. Note the poorly molded TD design. *e*, Front of bowl of a typical TD clay pipe, No. 138. *f*, Broken stem with spur of a TD pipe. Spur has the letter W on it, No. 139. *g*, Spur and portion of a bowl base of an unidentified type of clay pipe. Note the fluting on the bowl base, No. 48. *h*, Portion of a bowl front from the type of pipe shown in *i* and *j*. Note the fine diagonal fluting on this specimen, No. 48. *i*, Fluted pipe bowl of an unidentified type of clay pipe, No. 177. *j*, Rear of bowl, same specimen, No. 177. *k*, Side view of clay pipe stem decorated with a line and dot design. Note the teethmarks on the rear of the stem, Nos. 256 and 260. *l*, Side view of stem decorated with line and dot design. As positioned in the plate, the stem would fit onto the fluted pipe bowls, *i* and *j*, No. 267. *m*, Top view of a stem decorated with the line and dot design, Nos. 162 and 227. *n*, Side view of stem decorated with the line and dot design. Note the fluting at the front of the stem. Specimen is from F–13.

PLATE 62

Tools and equipment. *a*, Triangular steel file, No. 45. *b*, Commercial whetstone, No. 187. *c*, Commercial whetstone, Nos. 57 and 186. *d*, Dressed limestone fragment, No. 1. *e*, Horse bit (?), No. 146. *f*, Iron staple, No. 303. *g*, Iron tube, No. 30. *h*, Charred wooden disk, No. 239.

PLATE 63

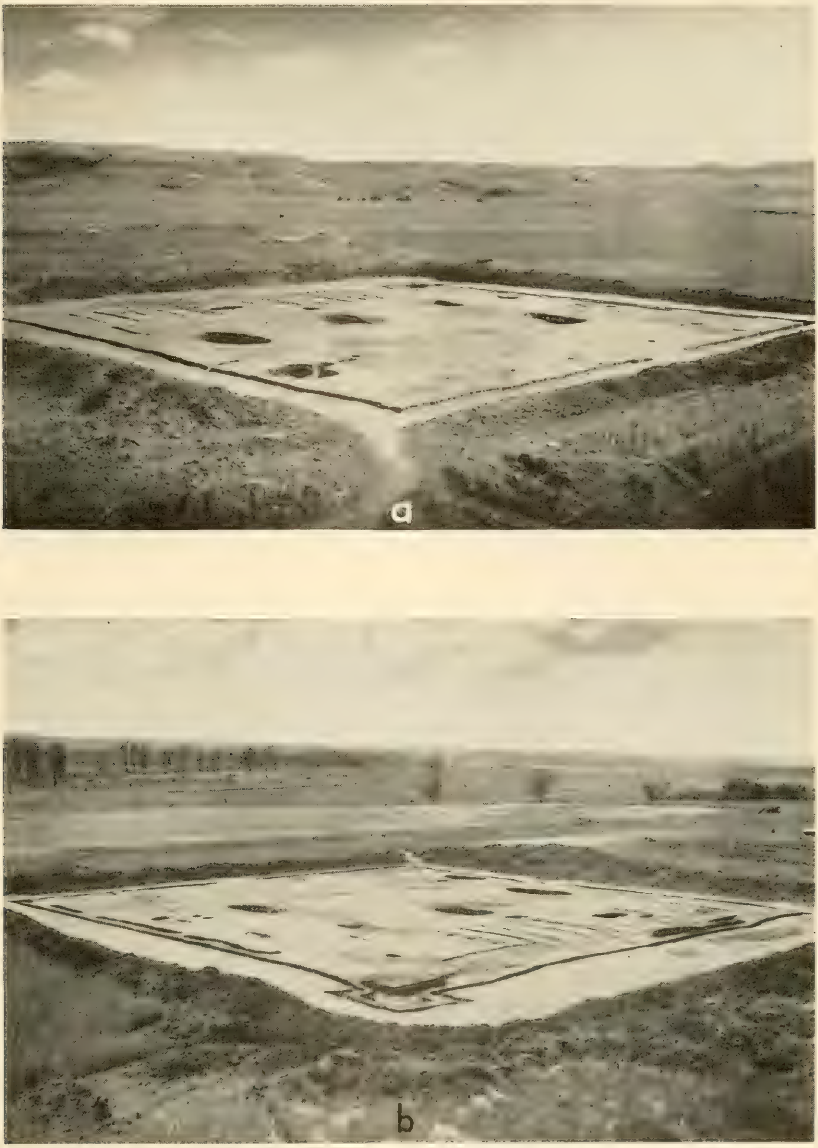
Clothing and footwear (buttons and a shoe). *a*, Large brass button with "PLATED" stamped on it, No. 42a. *b*, Brass button with "BEST QUALITY" stamped on it, No. 42b. *c*, Brass button with "BEST QUALITY" stamped around the upper rim; a wreath is on the lower rim. In the center is a sunburst, No. 42c. *d*, Brass button with "BEST QUALITY" stamped on it, No. 42d. *e*, Brass button with a concave rear, No. 42e. *f*, Brass button with a flat body, No. 42f. *g*, Brass button with four holes in the form of a square, No. 42h. *h*, Brass button with "WARRANTED SUPERIOR" stamped on it, No. 42g. *i*, Polished steel button with attached loop broken off, No. 200. *j*, Iron button with a loop, No. 42m. *k*, Iron button with four holes in the form of a square, No. 42n. *l*, Turned bone button with five holes, No. 42i. *m*, Bone disk button with a single central hole, No. 42l. *n*, Turned bone button with five holes, No. 42j. *o*, Turned bone button with five holes, No. 42k. *p*, Bone disk button, No. 42p. *q*, A leather shoe with a single pair of eyelets and a plain toe, Nos. 170, 172, 173.

PLATE 64

Trade goods (shale and catlinite pipes, beads). *a*, Shale (blackstone) pipe, rear of bowl, No. 88. *b*, Catlinite pipe with inletting for lead or pewter inlays, No. 253. *c*, Shale pipe, No. 87. *d*, Native cylindrical sandstone whetstone, Nos. 49 and 55. *e*, Translucent white oblate spheroidal bead, No. 201. *f*, Translucent amber globular bead, S. I. No. 40. *g*, Translucent clear glass globular bead, No. 304. *h*, Translucent blue glass bead with a white paste center, No. 305. *i*, Subcylindrical beads of a dark green translucent glass, No. 306. *j*, Globular beads of a bright blue translucent glass, No. 307. *k*, Translucent subcylindrical bead of an amber glass, No. 308. *l*, Subcylindrical beads of a bright blue translucent glass, No. 309. *m*, Subcylindrical beads of a translucent amber glass, No. 310. *n*, A tubular or canon bead of white glass frit (owned by Fred La Rocque). *o*, A tubular or canon bead of an opaque white glass frit, No. 320. *p*, Tubular or canon beads of an opaque green material, No. 320. *q*, Tubular or canon beads of an opaque pearllike white material, No. 320. *r*, An oblate spheroidal bead of a white glass frit, No. 318. *s*, An oblate spheroidal bead with a light green color, No. 317. *t*, White, pale green, blue, dark green, and blue green opaque barrel beads, No. 319. *u*, A cast copper bead with an attached wire hook, No. 326.

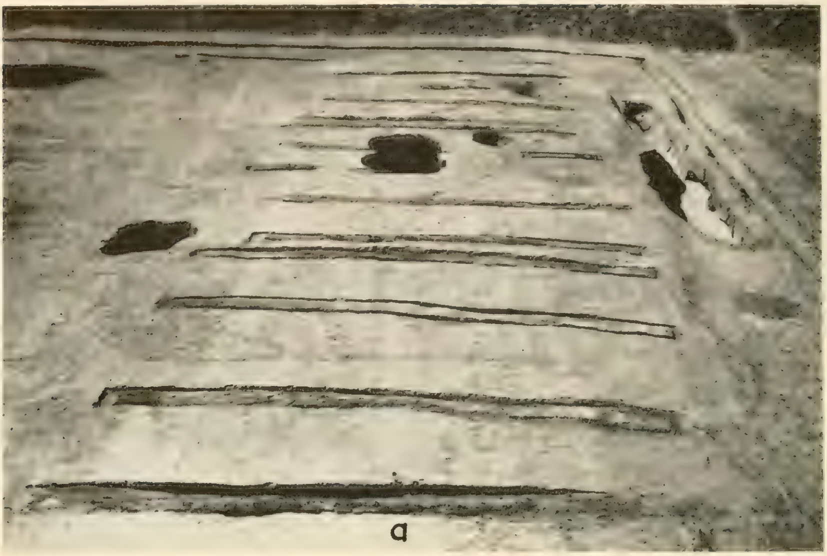
Plate 65

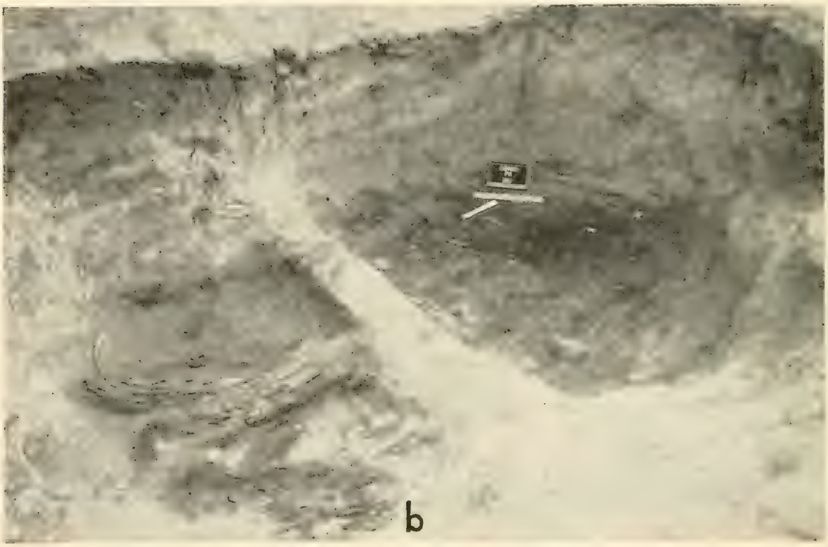
Trade goods (beads). *a*, Top row, white translucent faceted beads—in the center are two translucent beads with white paste centers, No. 311; center row, blue green translucent faceted beads, No. 311; bottom row, blue translucent faceted beads, No. 311. Many of these beads have white paste centers. *b*, Top three rows, three sizes of white seed beads, Nos. 322, 323, and 324; Bottom three rows, three sizes of blue seed beads, No. 321. *c*, Three sizes of opaque blue beads: top, No. 314; center, Nos. 60, 313, 205, and 251; bottom, Nos. 202, 203, 234, and 312. *d*, Three sizes of opaque white globular beads; top, No. 240; center, No. 315; bottom, No. 316.



Two views of the excavated Kipp's Post.

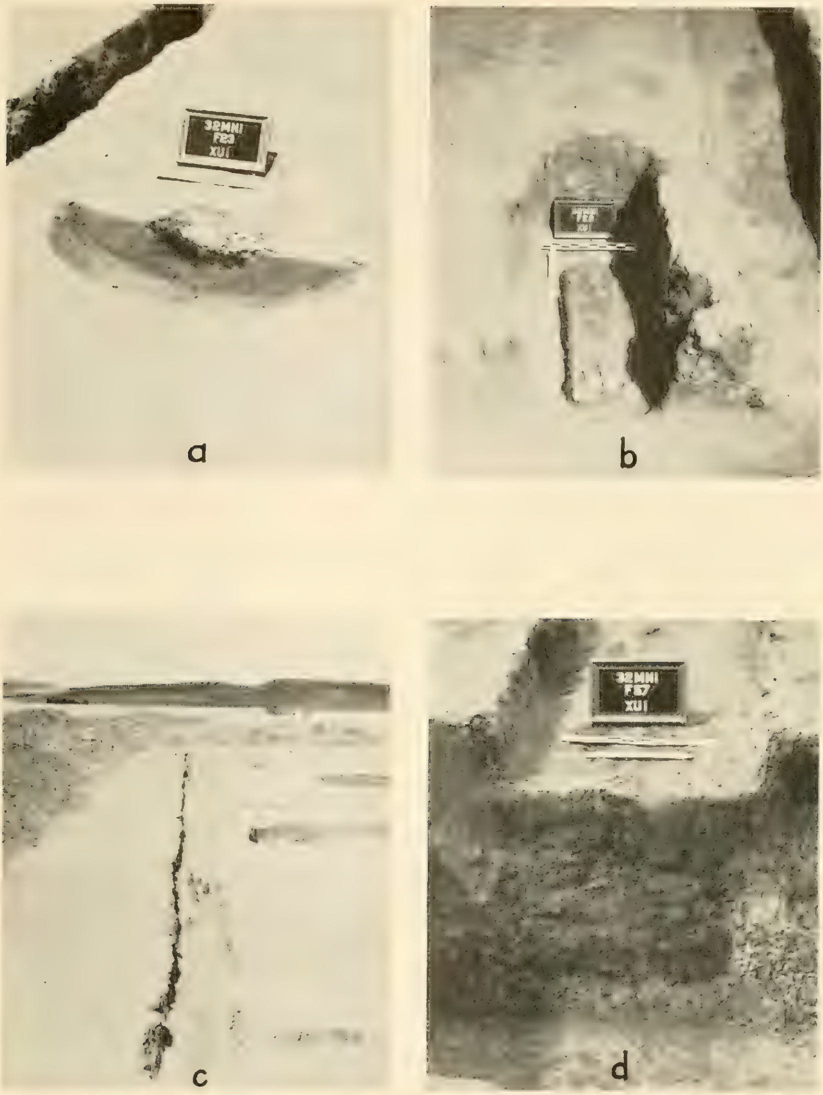
(For explanation, see p. 303)



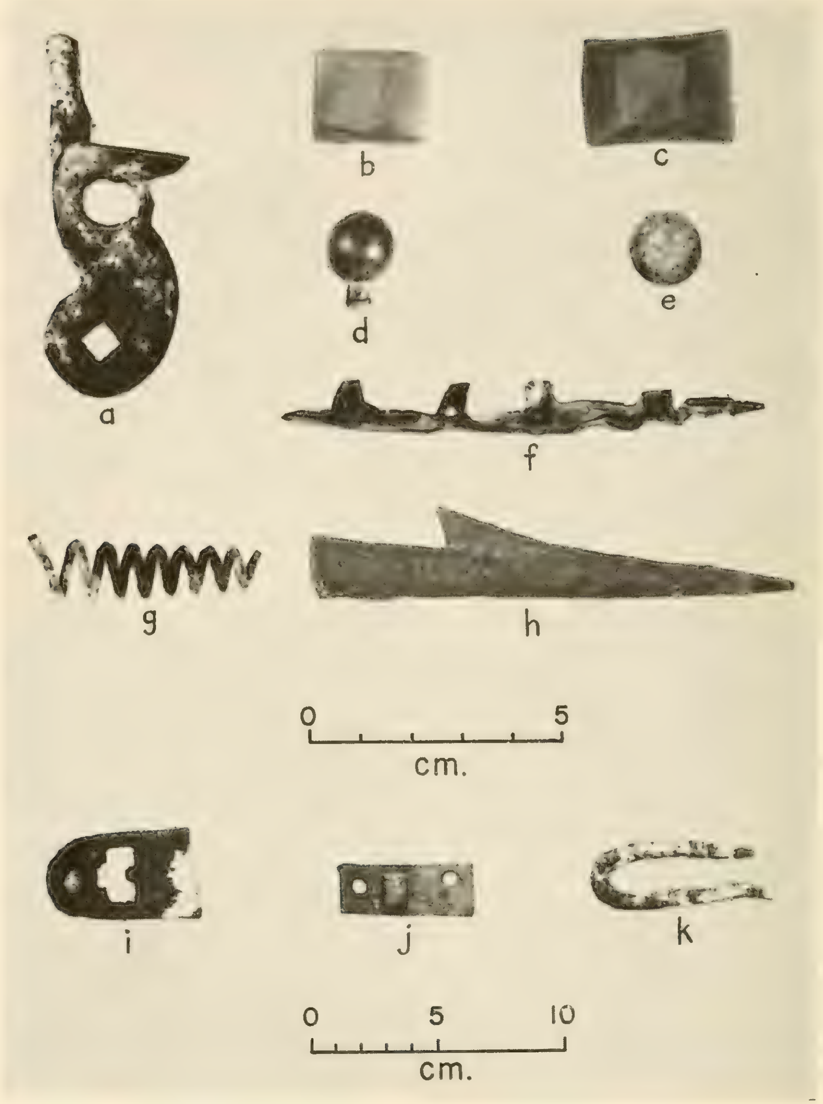


Two views of Features in Kipp's Post.

(For explanation, see p. 303)


32MNI
F23
XU1
a
b
32MNI
F57
XU1
c
d

Four views of portions of the excavated post.
(For explanation, see p. 303)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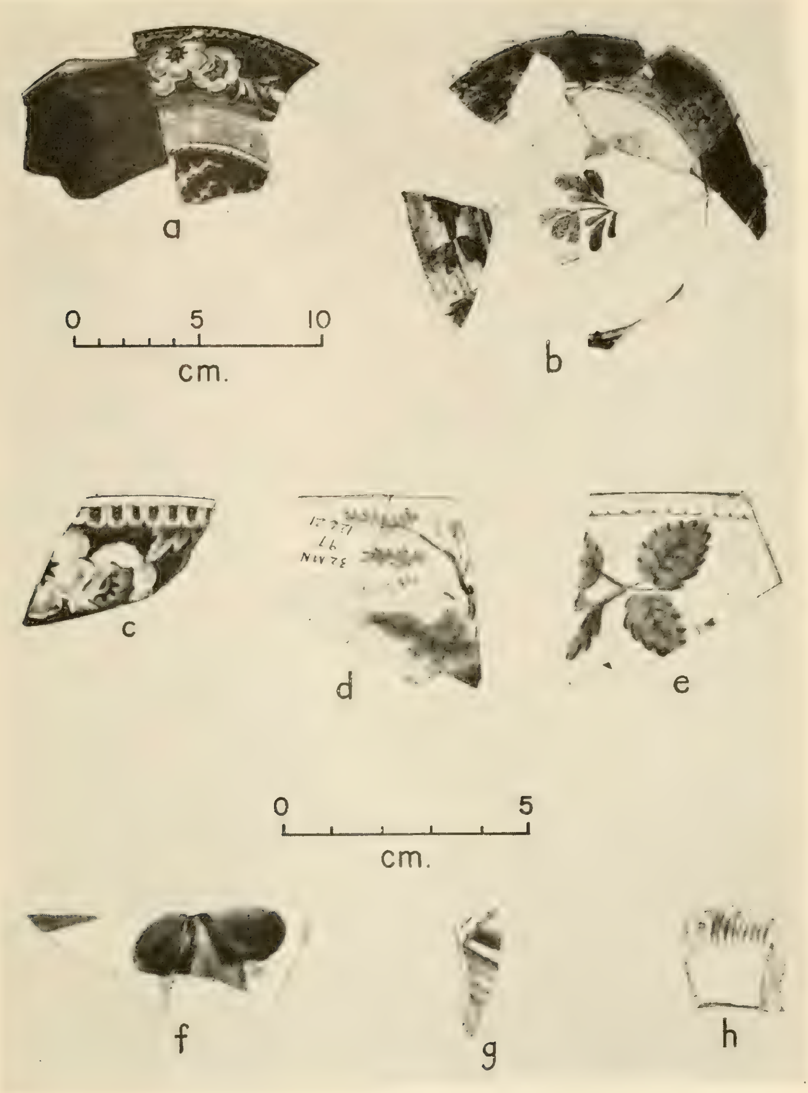
Defense, hunting, housing, and construction artifacts.

(For explanation, see p. 303)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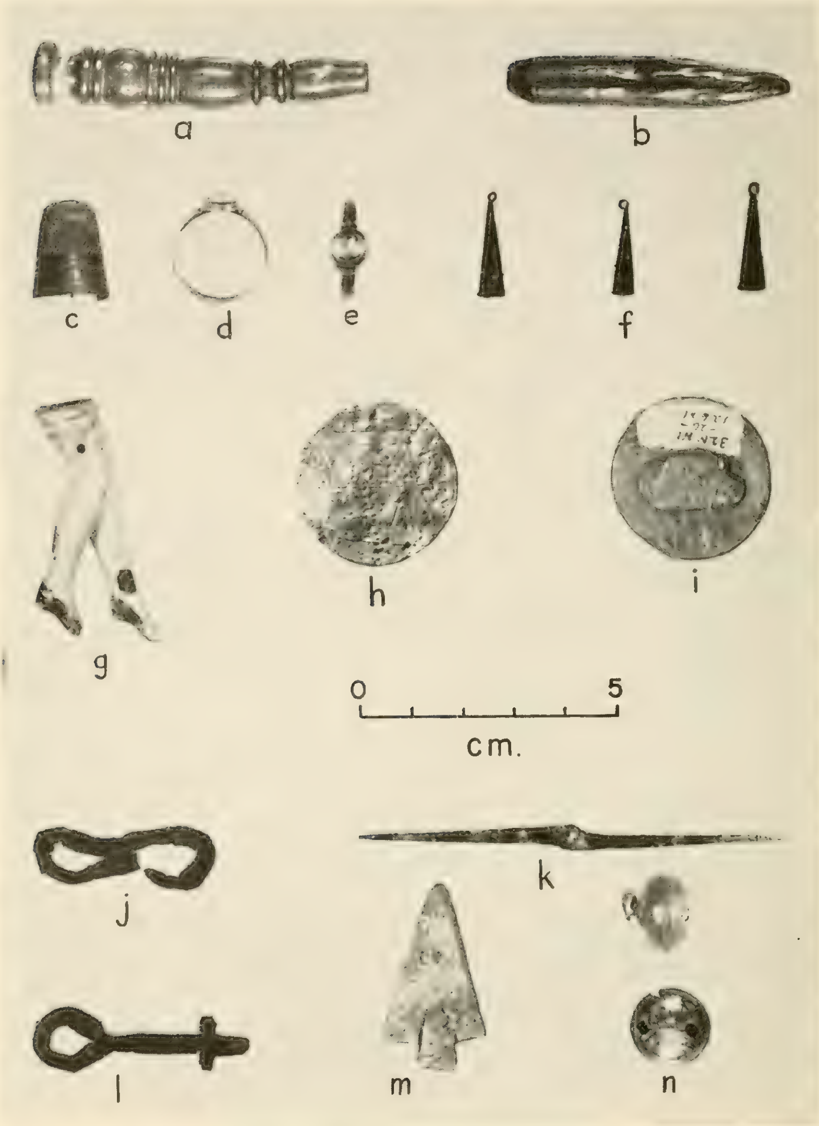
Household goods (glazed earthenware).

(For explanation, see p. 303)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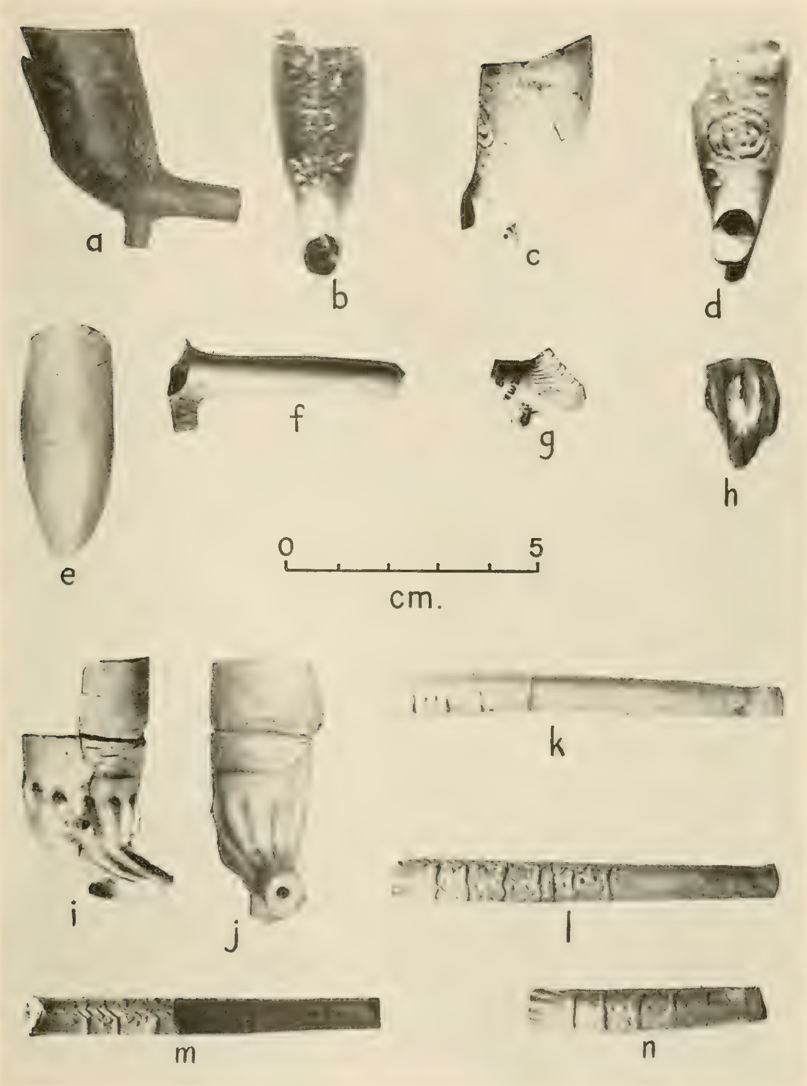
Household goods, personal possessions, tools, and equipment.
(For explanation, see p. 303)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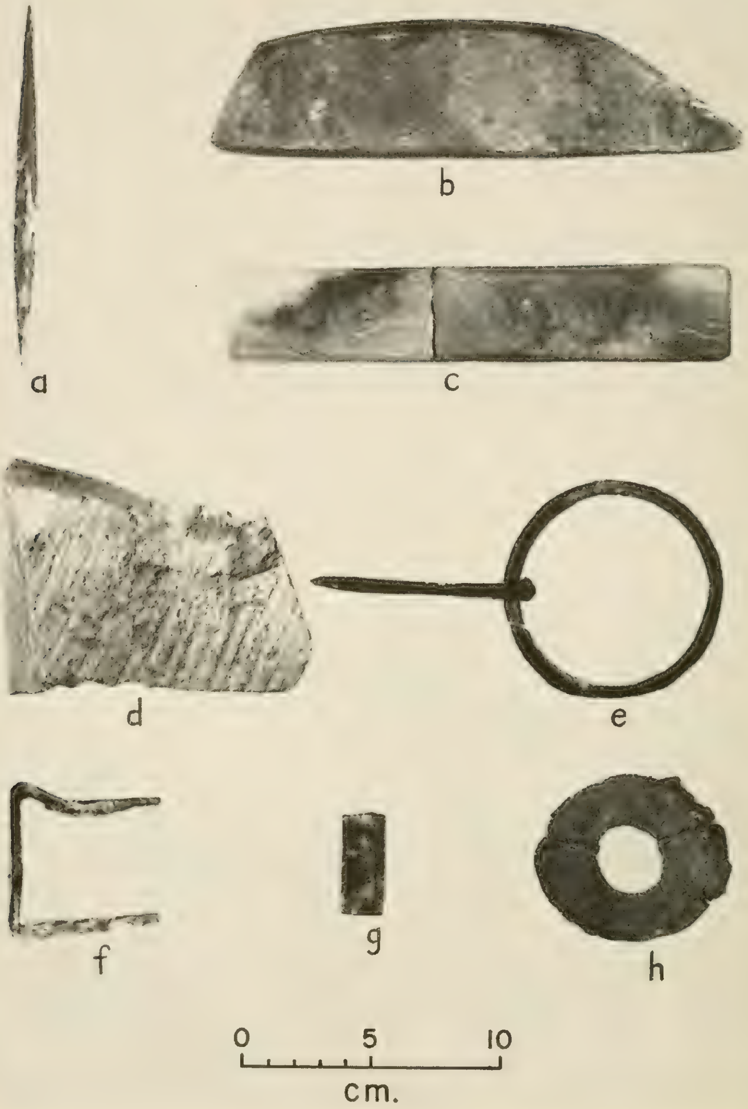
Personal possessions (trade clay pipe fragments).

(For explanation, see p. 303–304)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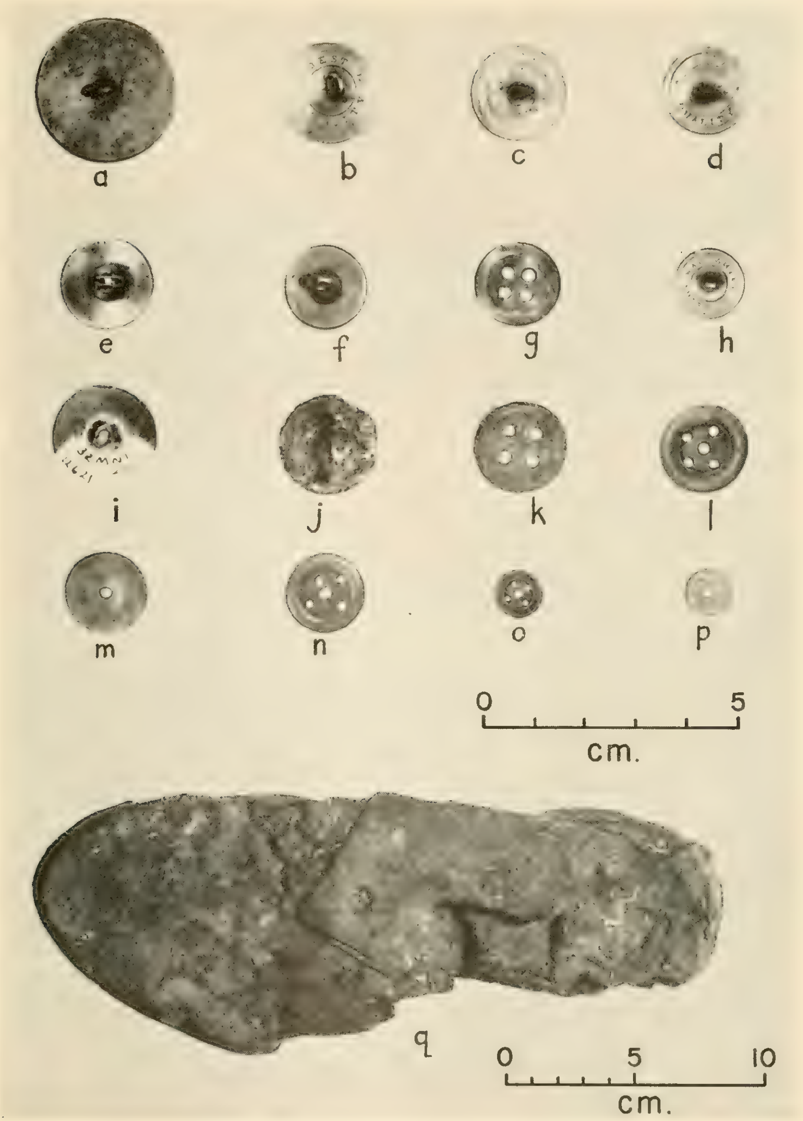
Tools and equipment (whetstones, dressed limestone fragment, etc.)

(For explanation, see p. 304)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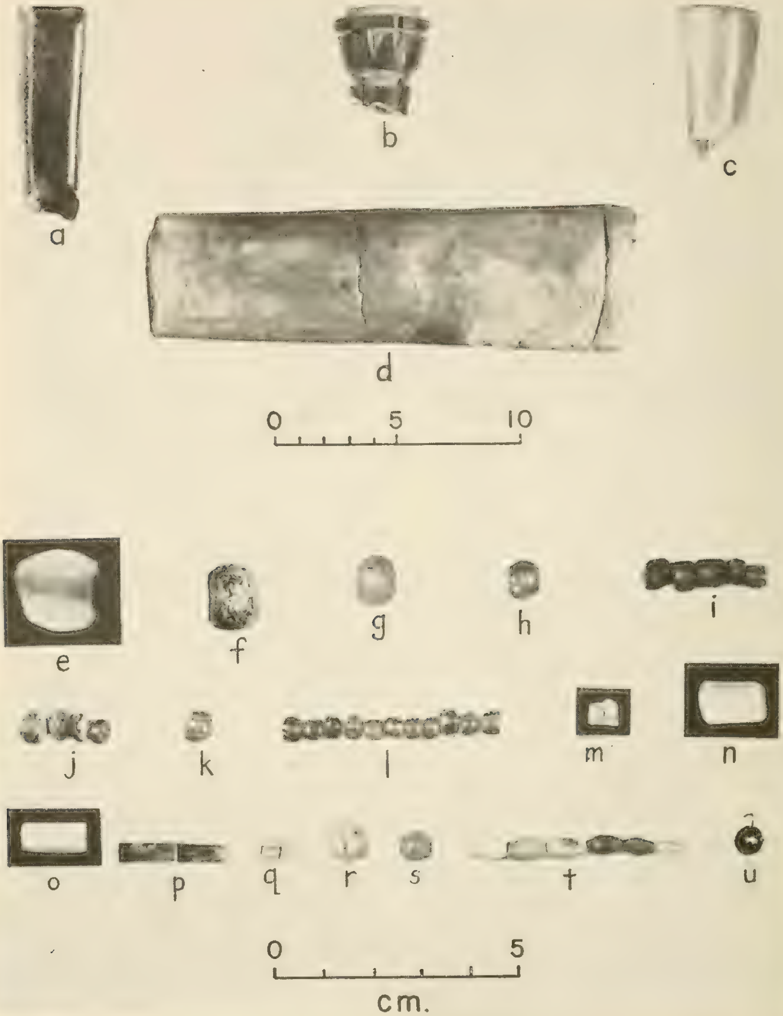
Clothing and footwear (buttons and a shoe).

(For explanation, see p. 304)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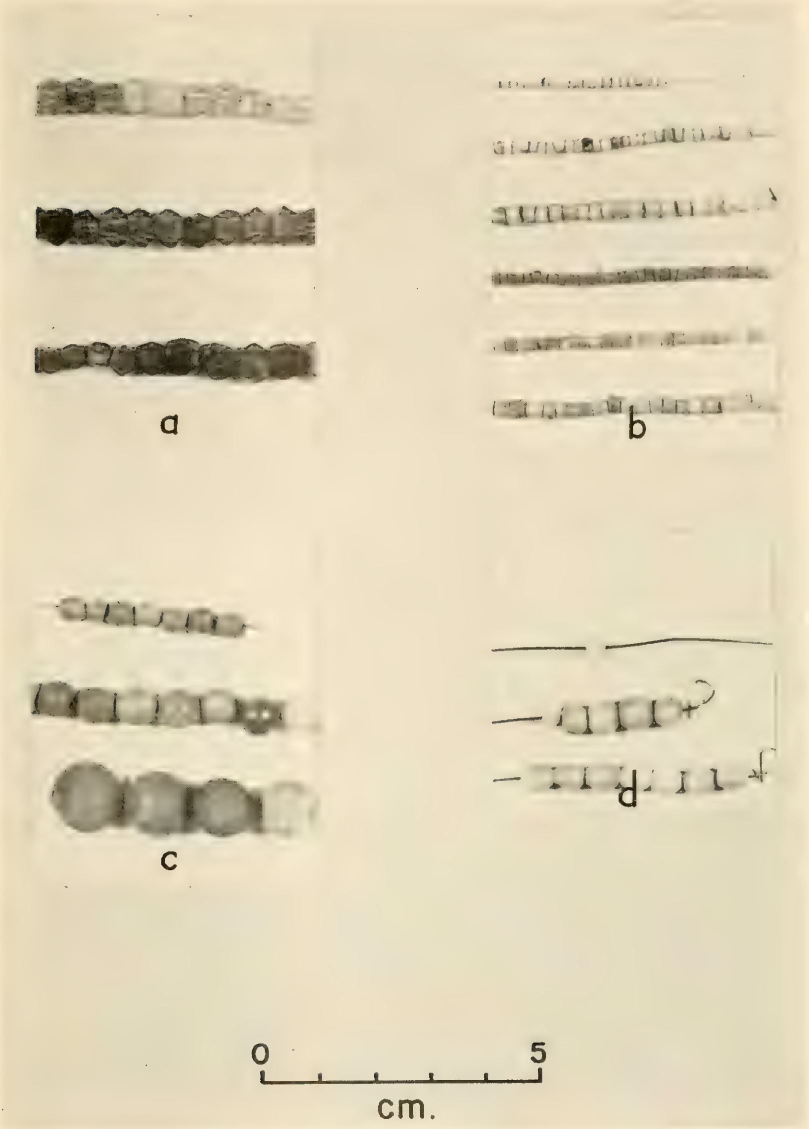
cm.

Trade goods (shale and catlinite pipes, beads).
(For explanation, see p. 304)



Trade goods (beads).
(For explanation, see p. 305)

APPENDIX

LIST OF REPORTS, ARTICLES, AND NOTES RELATING TO THE SALVAGE PROGRAM PUBLISHED IN OTHER SERIES

(As of April 1, 1959)

Adams, William Richard.

1946. Archeological survey of Martin County. Indiana Hist. Bull., vol. 23, No. 6, pp. 195–224.

1949. Archeological notes on Posey County, Indiana. Indiana Hist. Bur. Indianapolis.

Adams, William Y., and Nettie K.

1959. An inventory of prehistoric sites on the Lower San Juan River, Utah. Mus. Northern Arizona Bull. 31 pp. 1–54.

Baby, Raymond S.

1946. Survey of Delaware Reservoir Area. Museum Echoes, vol. 19, No. 8, Serial No. 208.

1949. Cowan Creek Mound exploration. Museum Echoes, vol, 22, No. 7, Serial No. 243.

1949. Stratton-Wallace site. Ann. Rep., Ohio State Archeol. and Hist. Soc., pp. 11–12.

1951. Explorations of the Cordray and Goldsmith Mounds. Museum Echoes, vol. 24, No. 12, Ser. No. 272.

Bell, Robert E.

1948. Recent archeological research in Oklahoma. Bull. Texas Archeol. and Paleont. Soc., vol. 19, pp. 148–154.

1949. Recent archeological research in Oklahoma, 1946–1948. Chronicles of Oklahoma, vol. 27, No. 3, autumn 1949, pp. 303–312.

1949. Archeological research in Oklahoma during 1947. Proc. Fifth Plains Conference for Archeology, Note Book No. 1, Lab. Anthrop., Univ. Nebraska, pp. 6–7.

1949. Archeological excavations at the Harlan site, Fort Gibson Reservoir, Cherokee County, Oklahoma. Plains Archeological Conference News Letter, vol. 3, No. 1, pp. 3–15.

1950. Notes on work at the Harlan site. Archeol. Newsletter, vol. 1, No. 4, pp. 1–2. Norman.

1951. Notes on work in Eufaula and Tenkiller Reservoirs. Archeol. Newsletter, vol. 2, No. 2, pp. 1–2. Norman.

1951. Notes on Tenkiller excavations. Archeol. Newsletter, vol. 2, No. 3, pp. 1–2. Norman.

1951. Notes on work at the Vanderpool sites. Archeol. Newsletter, vol. 2, No. 4, pp. 1–2, Norman.

1951. Notes on Tenkiller and Eufaula excavations. Archeol. Newsletter, vol. 2, No. 5, pp. 1–4. Norman.

1952. Notes on Keystone Reservoir survey. Oklahoma Anthrop. Soc. Newsletter, vol. 1, No. 1, p. 8.

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1952. Keystone archeological survey. Oklahoma Anthrop. Soc. Newsletter, vol. 1, No. 2, p. 4.

1952. Archeological field work, Morris site. Oklahoma Anthrop. Soc. Newsletter, vol. 1, No. 3, pp. 1–3.

1953. Digging for Indian history. The Indian Sign, vol. 4, No. 2, pp. 9–12. Tulsa.

1953. The Scott site, Le Flore County, Oklahoma. Amer. Antiq., vol. 18, No. 4, pp. 314–331.

1954. Excavations at Lake Texoma, Marshall County, Oklahoma. Oklahoma Anthrop. Soc. Newsletter, vol. 3, No. 3, pp. 2–3.

1956. Radiocarbon date from the Harlan site, Cherokee County, Oklahoma. Oklahoma Anthrop. Soc. Newsletter, vol. 5, No. 3, pp. 6–7.

1956. Radiocarbon dates from the Harlan site, Cherokee County, Oklahoma. Oklahoma Anthrop. Soc. Newsletter, vol. 5, No. 6, p. 2.

1958. Notes and news—Harlan site excavations. Oklahoma Anthrop. Soc. Newsletter, vol. 7, No. 3, pp. 1–2.

1958. Archeological investigations at the Boat Dock site, Ma–1, in the Lake Texoma area, Marshall County, Oklahoma. Oklahoma Anthrop. Soc. Bull. VI, pp. 37–48.

1958. Radiocarbon dates from Oklahoma. Oklahoma Anthrop. Soc. Newsletter, vol. 7, No. 3, pp. 3–4.

Bell, Robert E., and Baerreis, David A.

1951. A survey of Oklahoma archeology. Bull. Tex. Archeol. and Paleont. Soc., vol. 22, pp. 7–100. (General study which contains information obtained by salvage program.)

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1952. Archeological discoveries at the Morris site, Cherokee County, Oklahoma. Chronicles of Oklahoma, vol. 30, No. 2, pp. 216–235.

Bliss, Wesley L.

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1950. Birdshead Cave, a stratified site in the Wind River Basin, Wyoming. Amer. Antiq., vol. 15, No. 3, pp. 187–196.

Bray, Robert T.

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Breternitz, David A.

1957. Heltagito rock shelter (NA6380). Plateau, vol. 30, No. 1, pp. 1–16. Flagstaff, Ariz.

1957. A brief archeological survey of the Lower Gila River. Kiva, vol. 22, Nos. 2–3. Tucson, Ariz.

Brew, J. O., and others.

1947. Symposium on river valley archeology. Amer. Antiq., vol. 12, No. 4, pp. 209–225.

BULLEN, RIPLEY P.

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BURGH, ROBERT F.

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1950. A preliminary report on excavations in the Allatoona Reservoir. Early Georgia, vol. 1, No. 1, pp. 5–22.

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1958. Trend and tradition in the prehistory of the eastern United States. Mem. No. 88, American Anthrop. Assoc. Sci. Pap., vol. 10; Amer. Anthrop., vol. 60, No. 6, pt. 2.

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1952. The Booger Bottom mound: A Forsyth Period site in Hall County, Georgia. Amer. Antiq., vol. 17, No. 4, pp. 319–328.

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1950. Reconstruction of the Woodstock Fort. Early Georgia, vol. 1, No. 2, pp. 22–30.

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1956. The archeology of Wakemap: A stratified site near The Dalles of the Columbia. Abstr., microfilmed, Publ. No. 17, 119, University Microfilms, Ann Arbor.

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CASON, JOE F.

1952. Report on archeological salvage in Falcon Reservoir, season of 1952. Bull. Texas Archeol. and Paleont. Soc., vol. 23, pp. 218–259.

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1949. White Cat Village. Amer. Antiq., vol. 14, No. 4, pt. 1, pp. 285–292.

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CHAPMAN, CARL H., and BRAY, ROBERT T.

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